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ILLUSTRATIONS

OF THE

ZOOLOGY OF SOUTH AFRICA;

CONSISTING CHIEFLY OF

FIGURES AND DESCRIPTIONS OF THE OBJECTS OF NATURAL HISTORY

COLLECTED DURING

AN EXPEDITION INTO THE INTERIOR OF SOUTH AFRICA,

IN THE YEARS 1834, 1835, AND 1836;

FITTED OUT BY

"THE CAPE OF GOOD HOPE ASSOCIATION FOR EXPLORING CENTRAL AFRICA."

TOGETHER WITH

A SUMMARY OF AFRICAN ZOOLOGY,

AND AN INQUIRY INTO THE GEOGRAPHICAL RANGES OF SPECIES

IN THAT QUARTER OF THE GLOBE.

BY ANDREW SMITH, M.D.,

SURGEON TO THE FORCES, AND DIRECTOR OF THE EXPEDITION.

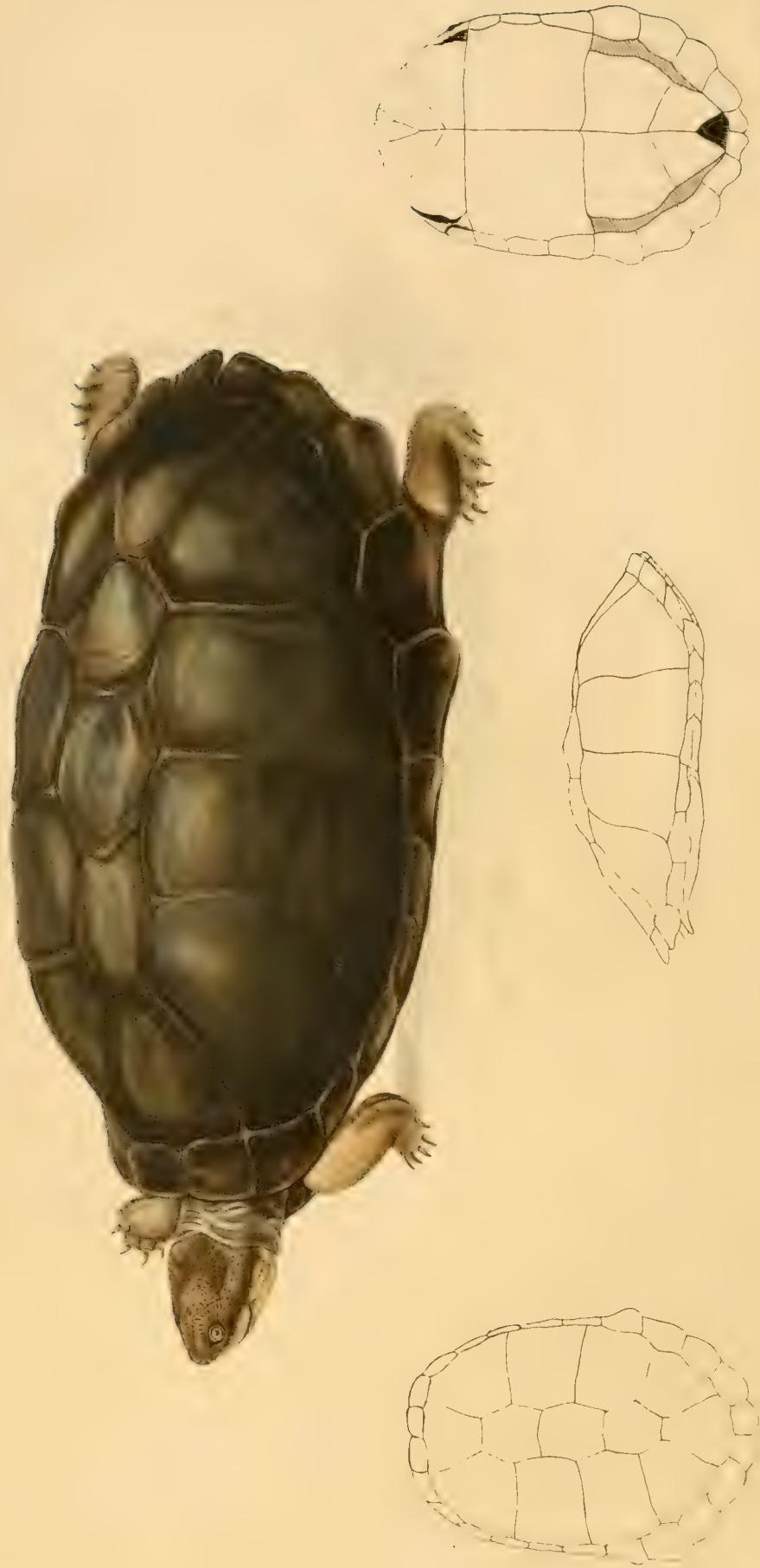
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STER NOTHERUS SINUATUS

Replica Plate I



STERNOTHERUS SINUATUS.—SMITH.

REPTILIA.—PLATE I. (MALE.)

S. capite pallidè stramineo-brunneo marmorato; capitis lateribus viridi-flavis; collo livido-brunneo pedibus stramineis maculis brunneis variegatis; testâ suprà viridi-brunneâ, subtus aurantiâ, rubri-brunneo marginatâ; unguibus rubri-brunneis; mandibulâ superiori apice emarginato; inferiori apice acuminato, sursum productâ.

COLOUR.—Head above pale straw-yellow, finely marbled with brown lines; sides of head and lower jaw, greenish-yellow; neck livid brown; legs intermediate between wine and straw-yellow; nails reddish brown, occasionally inclined to yellow. Shell above dark greenish brown, the colour deepest towards the margin; the vertebral and the upper extremities of the costal plates tinted with livid grey; sternum, pale orange, variegated towards its edges with deep reddish brown, the latter colour most abundant upon the gular, the intergular, the anal, and the lateral parts of the abdominal plates; outer sides of upper and under jaws dark brown, with fine reddish brown vertical lines. Eyes straw-yellow.

FORM, &c.—Shell oblong, convex, and rather high; margin ovate, and broadest behind, where it is more or less sinuated. The second and third vertebral plates nearly horizontal and six-sided, the anterior edge of each narrower than the posterior; the fourth somewhat six-sided, the anterior edge broader than the posterior; the first somewhat four-sided, the anterior edge much broader than the posterior, and each of its angles sometimes produced so as to form on each side a triangular projection between the first costal and the anterior marginal plates; near the centre of the anterior edge of this plate is another triangular projection which enters between the two foremost marginal plates; the posterior dorsal plate somewhat of the same form as the anterior one, only narrower; the third and fourth plates with a central elevation towards their hinder margins. Costal plates higher than broad, four-sided, the first of these where it is in contact with the marginal plates very wide, which gives it a somewhat triangular appearance. Marginal plates twenty-four: the first, second, third, fourth, ninth, tenth, eleventh, and twelfth, four-sided, the fifth, sixth, seventh, and eighth, more or less five-sided, and on the anterior side of each at the very margin of the shell is a small triangular process, which is received into a corresponding cavity in the hinder edge of the scale immediately in front of it; margin between the fore and hinder legs obtuse, elsewhere thin and sharp. Sternum semicircular in front, deeply emarginate behind; a transverse joint between pectoral and abdominal plates; gular plates small and triangular;

STERNOTHERUS SINUATUS.

intergular plate five-sided; brachial plates rhomboidal; pectoral plates at their commissure with each other narrow, the posterior edges straight, the anterior oblique, owing to which circumstance the outer sides are much wider than the inner; anal plates triangular. Head broad and depressed; nose short and rounded; the fronto-nasal plates forming a portion of the hinder edges of the orbits; the frontal plate very large and inclined to six-sided; the parietal plates oblong, and broadest in front; the post-orbital plate small and oval. The apex of upper mandible emarginate with an obtuse tooth-like process on each side of the emargination; the tip of the lower mandible produced and directed upwards; under the chin two minute barbels. Neck and legs sparingly covered by small scales; the hinder edge of each fore leg towards the toes with a broad fringe of thin delicate plates; the toes short and armed with strong claws nearly straight and slightly concave below. The posterior edges of the hinder feet also with a continuous fringe of thin scales, the outermost toe rudimentary, the second and innermost nearly of equal length, and shorter than the third and fourth. Tail rather long, pointed and somewhat cylindrical.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from nose to hinder margin of shell	19	0	Breadth of shell across femoral plates...	9	3
of head and neck	5	6	Length of tail.....	2	5
of shell	14	5	of sternum from anterior to hinder edge	13	3
Height of shell	5	3			

The colours in the *female* are nearly similar to those of the male. In both sexes the head, neck, and anterior extremities, when retracted, are completely protected by the anterior portion of the sternum, which by means of the joint in front of the abdominal plates is closely applied to the anterior margin of the upper shell. The principal differences between this species and *Sternotherus ater* and *S. castaneus* will be found in the general form of the shell, the shape of the plates, and the structure of the tip of the upper mandible.

The first specimens of this tortoise were discovered in rivers to the north of 25° south latitude, and in situations only where the water was very deep. They were usually observed during the heat of the day lying upon rocks which projected above the surface of the water, and were so vigilant that it was almost impossible to approach them within a moderate distance, before they vanished. Many of them were struck by musket balls, yet no wounds which were thus inflicted ever appeared to impede their movements. At last, by means of hooks baited with flesh we succeeded in obtaining a few specimens, though against such means they were also guarded; for even where individuals existed in abundance, perhaps not one could be secured by four or five fishermen, after spending many hours in the pursuit. Between 24° and 25° they occurred in greatest abundance, probably from the circumstance that between those parallels the pools were deepest; to the north of the former parallel they appeared to be scarce, owing no doubt to the channels of the streams being there loaded with gravel and sand.



Varanus albovarius *Gray*

VARANUS ALBOVARIUS

(Reptilia - Plate 2.)

VARANUS ALBOGULARIS.—DAUD.

REPTILIA.—PLATE II. (MALE.)

V. capite quadrangulari, versus apicem attenuato; naribus obliquis angustis propè oculos positis; collo corporeque obesis; pedibus validis; caudâ versus basin subcylindricâ dein compressâ, supra carinatâ; capite colloque, subochreis brunneo-maculatis; fasciâ brunneâ ab oculo ad dorsum; corpore supra brunneo, fasciis, maculis lincisque subochreis variegatis, subtus subochreo, guttis brunneis sparso; caudâ fasciis brunneis subochreisque alternantibus fasciata.

VARANUS GILLII.—*Smith*, South African Quarterly Journal, 1831.

COLOUR.—Head and neck intermediate between gamboge and ochre-yellow, the former and the sides and back of the neck finely freckled by small black spots; from the outer corner of each eye, a brown stripe extends along the neck, and terminates on the back immediately behind the base of the fore leg, where it is much broader than at its commencement; this stripe is generally darkest at its edge and lightest along its centre: between the terminations of these stripes there are in most specimens two large brown blotches separated from each other by a yellowish line. Back brown, crossed by three or four ochry yellow bands, which are, either in the form of continuous stripes or interrupted blotches, and is besides variegated by smaller spots, or waved narrow stripes of the same colour; the larger bands and blotches sprinkled with small brown spots. The sides ochry yellow with small brown spots and vertical stripes, the latter continued from the brown of the back; belly the same colour as the sides, with a sprinkling of small brown spots. Tail beneath ochry yellow; above and on the sides marked by alternate brown and yellow bands, the former spotted with yellow, the latter with brown. The outer surface of anterior extremities ochry yellow, spotted with brown; the posterior extremities dark brown, spotted with ochry yellow; toes, the latter colour, with some indistinct brownish bars; nails dark horn-coloured.

FORM, &c.—Head rather small; neck and body robust and rather flattened; limbs thick and strong. The head is quadrangular, rather short, broad behind, and tapered towards the nose; nostrils oblique, linear, and situated near to the eyes; teeth somewhat cylindrical and strong, obtuse in some specimens, pointed in others; external ear, transverse and narrow; tail somewhat cylindrical towards the base, the remainder compressed above and surmounted by a distinct serrated carina with a slight channel along its upper surface; towards the tip of the tail this carina almost disappears. Upper surface of the head covered by flat somewhat circular scales, rather small, particularly over the eyes; lips and temples covered with small scales, on the

VARANUS ALBOGULARIS.

former oval, on the latter circular. On the nape and upper part of the neck the scales of a larger size than on any other part of the animal, and are besides more raised, with the granulations surrounding the discs very distinct. On the back and sides, the scales are disposed in waved transverse bands, and only differ from those of the neck in being of smaller size and less convex; on the tail they are arranged in regular rings; towards its base oval, and more or less completely margined by granulations; towards the tip oblong, subcarinated and almost without any edging. On the chin, throat, and sides of the neck, the scales are small and oval; on the breast somewhat circular, on the belly oval, in transverse rows, and only margined behind by granulations; on the outer and anterior sides of the limbs towards the body, they are oblong; towards the toes somewhat circular; all surrounded by granulations; on the inner sides again they are smaller and nearly circular. The inner toe of hinder foot very short and robust; the outer one much removed from the rest; on the fore foot the inner toe is shorter than any of the others, but longer than the corresponding one of the hinder foot.

DIMENSIONS.

	Feet. Inches.		Inches. Lines.
Length from the nose to the tip of the tail	2 8*	Distance between the fore and the hinder legs	0 7
of the tail.....	1 6	Length of the fore legs to the apex of the nail of the longest toe...	4 9
from nose to base of fore legs	0 5½	of the hinder leg to ditto.....	5 6

The *female*, as regards external appearances, differs but little from the male.

Though no specimens of this species were obtained south of Latakoo, yet there is reason to believe it occasionally occurs within the limits of the Cape Colony; it is, in all probability, the animal which is called the *Das adder* by the colonists, and which is so much dreaded under an idea of its being extremely venomous. It is usually discovered in rocky precipices, or on low stony hills, and when surprised seeks concealment in the chinks of the former, or in the irregular cavities of the latter; and when any inequalities exist upon the surface of the rocks or stones, it clasps them so firmly with its toes, that it becomes a task of no small difficulty to dislodge it, even though it can be easily reached. Under such circumstances, the strength of no one man is able to withdraw a full-grown individual; and I have seen two persons required to pull a specimen out of a position it had attained, even with the assistance of a rope fixed in front of its hinder legs. The moment it was dislodged it flew with fury at its enemies, who by flight only saved themselves from being bitten. After it was killed, it was discovered that the points of all the nails had been broken previously, or at the moment it lost its hold. It feeds upon frogs, crabs, and small quadrupeds; and from its partiality to the two former, it is often found among rocks near to springs or running streams, which fact having been observed by the natives, has led them to regard it as sacred, and not to be injured without a danger of drought.

* Specimens are occasionally obtained, which measure between four and five feet.



BUTEOPHALUS VIRIDIS
Reptilia ... Plate 34

BUCEPHALUS VIRIDIS.—SMITH.

REPTILIA.—PLATE III.—(MALE.)

B. pallidè viridis; oculis brunneis; scutis abdominalibus 181; scutis subcaudalibus serie duplici collocatis circiter 101.

COLOUR.—Light grass-green, the abdominal plates with a slightly livid tint; eyes dark brown.

FORM, &c.—Head moderately elongated, distinctly quadrangular and broader than the neck; nose slightly rounded; nostrils small, nearly circular, and directed outwards and backwards; eyes large, and situated rather nearer to the tip of the nose than the angle of the mouth; gape wide; upper lip with seven plates on each side, lower with ten. Nasal plate triangular, apex directed backwards; anterior frontal plates two, somewhat triangular; posterior frontal plates large quadrangular, the outer posterior angle rounded; vertical plate triangular, the apex behind, rounded; occipital plates large, irregular and narrow behind; palpebral plates somewhat six-sided, the two middle sides longest. Gular plates large, two in each row. The posterior or mobile and grooved teeth of maxilla, eight on each side, from two to three lines in length, and slightly curved; four of each group placed for immediate use, the rest recumbent between those and the inner portion of the spongy sheath which envelopes the whole; the fixed or anterior teeth of maxilla small and slightly curved, their points directed backwards; those of the palatal arches and lower jaw somewhat similar. Body gradually increasing in size till near the middle, from thence it tapers to the point of the tail, which is armed with a horny aculeus; the figure of body and tail subcylindrical, slightly flattened below. Skin as far as the tail loose, and only slightly connected with the subjacent parts by a delicate cellular membrane; towards the head superabundant, and forming on each side of the neck a longitudinal fold, which disappears when the gullet is distended. On the tail the skin is firmly connected to the parts beneath. Scales immediately behind occipital plates short, broad, and imbricate; from those to the base of the tail they are disposed in slightly waved transverse bands, each of which bands includes scales of several different forms; the one immediately on the centre of the back is narrow towards the base, broad and semilunar at the

BUCEPHALUS VIRIDIS.

extremity, with a faint carina along its centre, the lateral ones oblong, each with an obtuse angular or semilunar point, and a carina extending from the base, and terminating on the upper edge of the scale before reaching its apex ; the two scales of each row nearest to the abdominal plates broad and subtriangular, the points rounded, and the longitudinal carina with which each is marked terminates on its lower edge behind its point. The scales on the tail are short, broad, distinctly imbricate, and somewhat five-sided, characters which they retain to its extremity ; abdominal plates, 181 ; sub-caudal scales, 101 in each row.

Unless when the skin is distended, the scales of the transverse rows overlap each other so much, that only the inner edge of each is left uncovered ; at such times the scales appear linear.

DIMENSIONS.

	Feet.	Inches.
Length from the tip of the nose to the extremity of the tail...	4	9
Length of the tail.....	1	2
Circumference of the thickest part of the body	0	3

The only specimen of this species which we obtained was found near to Old Latakoo, and at the time of its discovery was in a half torpid state, and coiled up among some dry grass which was interwoven with the slender branches of a small shrub. According to the natives, it ascends trees to rob the nests of birds, and its occurrence is by no means rare in that country during the summer season. Although a celebrated Herpetologist has expressed his belief* that snakes with the general characters of the species just described, ought to be retained in his genus *Dendrophis*, yet it appears to me that their position in it would be equally inappropriate, as it would be in the restricted genus *Coluber*. Besides the species now described, there are at least four others inhabiting South Africa ; and though they have been regarded by the author just alluded to as only varieties of one species, nevertheless, I am more convinced at present than when I submitted descriptions of them to the public,† that each ought to be regarded as distinct from the others. Supposing *Bucephalus typicus*, *Bellii*, *gutturalis* and *Jardinii*, to be only varieties of one species, how are we to explain the circumstances of their being all found in a similar climate and in similar descriptions of country, yet, nevertheless, in very different localities, and each propagating individuals like itself, which as far as we know never vary. In proportion as our knowledge of the more intricate details in the scheme of nature becomes extended, it will probably be discovered that each genus is regulated to a certain extent upon a plan peculiar to itself, and that in some genera the distribution of colours, not less than the peculiar tints, will furnish excellent specific distinctions. As regards *Bucephalus*, I feel disposed to consider it one of such genera.

* *Physiognomie des Serpens par H. Schlegel*, page 238. Hague, 1837.

† *Zoological Journal*, Vol. iv. page 441, May 1829.



ECHIDNA INORNATA.
(Reptilia. Plate 4.)

ECHIDNA INORNATA.—SMITH.

REPTILIA.—PLATE IV.

E. supra flavo-brunnea, subitus brunneo-flava, brunneo marmorata; caudâ supra fusco-variegatâ; capite distinco oblongo cordiformi; scutis abdominalibus 140; scutis subcaudalibus serie dupli collocatis circiter 24.

LONGITUDU 13 $\frac{1}{4}$ unc.

COLOUR.—Back and sides dark yellowish brown; belly brownish yellow, sparingly sprinkled with brownish dots; tail above indistinctly marked with dull brown spots or bars.

FORM, &c.—Head oblong, heart-shaped, and rounded at the nose, above flat, with a slight hollow between the eyes, depending upon the superciliary arches being considerably elevated; temples convex and bulging; nostrils close to the extremity of the head, their openings directed forewards and outwards; eyes lateral, and approaching the nostrils; neck considerably narrower than the hindhead; the body increases in size till within about four inches of the anus, where its thickness is greatest, from thence it tapers gradually to the latter. The tail is very short and slender, and terminates in a fine point. The scales on the nose and sides of the head in front of the eyes rounded, slightly convex, and smooth; on the top of the head, and on the space under the eyes and temples, they are rather oblong and slightly carinated; the eyes surrounded by a complete ring of small plane scales. On the neck, body, and tail, the scales are oval and slightly convex, each with a strong carina along its centre, and are disposed in oblique rows across the back; on the tail and hinder part of the body, the points of the scales reach, or even overlap the base of those directly behind them, whereby the carinæ are contiguous and form a series of delicate uninterrupted longitudinal ridges. On the remainder of the body they are more apart, and the continuous ridges do not exist.

DIMENSIONS.

Inches.

Length from the tip of the nose to the extremity of the tail.....	13 $\frac{1}{4}$
Length of the tail	1 $\frac{1}{4}$
Circumference of the thickest part of the body... ..	2 $\frac{3}{4}$

ECHIDNA INORNATA.

This snake was killed in the Sneeubergen, or Snow-mountains, which are situated immediately behind the village of Graaff Reinet, and was presented to the expedition party by J. Lieb, Esq., the government surveyor of the district.

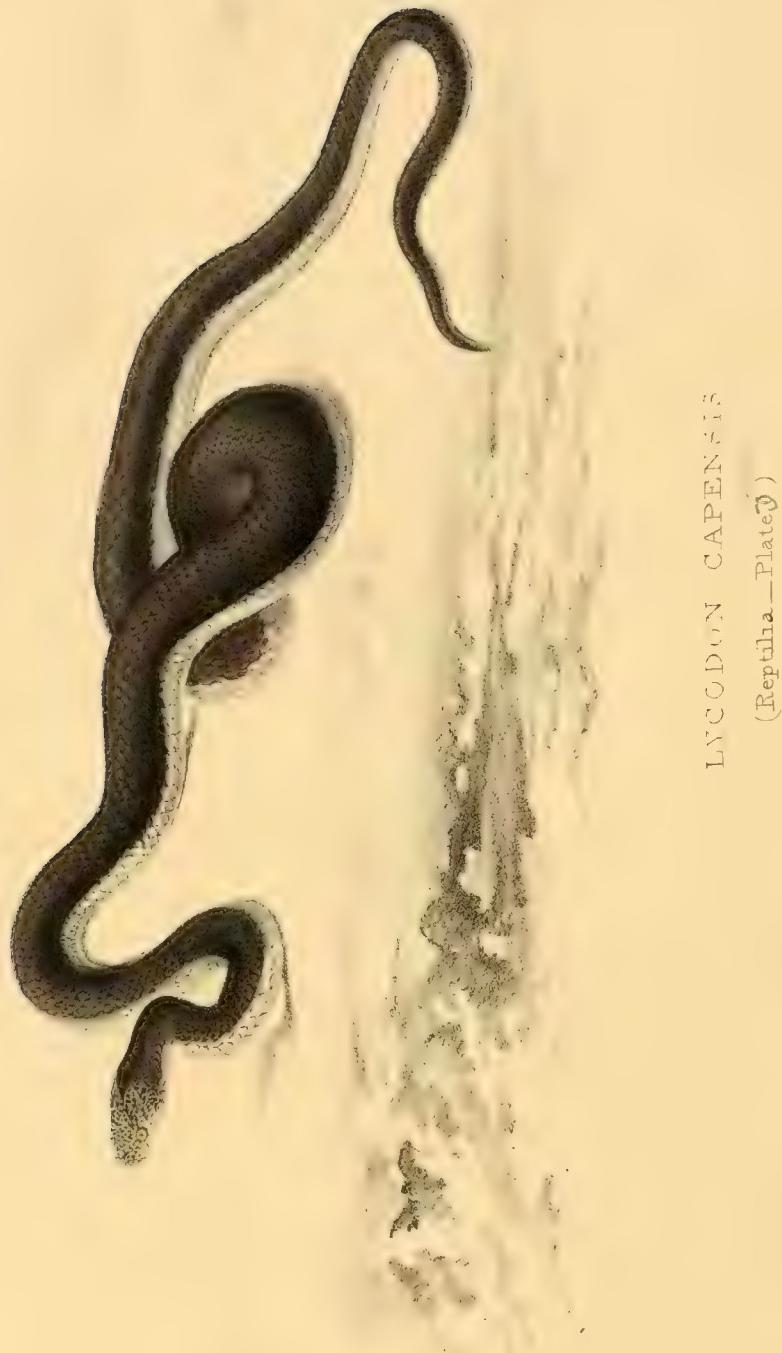
Little is known of the habits of this Snake, save that, like the other species of the genus, it is indolent, and heedless of the approach of man.

In addition to the species here figured, we shall, during the progress of these illustrations, have occasion to furnish representations of two others—the one *Vipera ocellata*, Smith,* (not Latreille), the other yet undescribed. The former has a projecting cylindrical scale, from a line to a line and a half in length upon each eye-brow, and is readily to be distinguished from *Vipera cornuta*, Daud, by having the under surface of the tail, whatever may be the age of the specimen, covered with scales nearly similar in form to those on the remaining portion, and faintly carinated. The latter, *Vipera atropoides*, exhibits a manifest resemblance to *Vipera atropos*, Daud, having, like it, two rows of black spots along the middle of the back, and some irregularly coloured variegations on the sides. It differs, however, in many material points, more particularly as regards the form and proportions of the head, and the arrangement of the scales, especially around and near the eyes.

Taking these into consideration, we will in future have to record six species of the genus *Vipera* as inhabitants of South Africa, viz., *Vipera arietans*, Merr.; *V. atropos*, Latr.; *V. cornuta*, Daud; *V. inornata*, Smith; *V. ocellata*, Smith; *V. atropoides*, Smith: or if we adopt the subdivisions proposed by Merrem and Wagler, which, in the present state of the science, may probably be employed with advantage, these species will stand:—*Echidna arietans*,—*E. atropos*,—*E. inornata*,—*E. atropoides*,—*Cerastes cornutus*, and *C. ocellatus*.

The vipers, and one or two species of *Elaps*, are the only snakes of South Africa which permit themselves generally to be closely approached without evincing any apparent concern; the others either manifest a disposition to act on the offensive, or to fly; even an unusual noise, without its cause being visible, is sufficient to ensure the retreat of the innocuous ones. The different species of *Naia* and the *Elaps lubricus*, Merr., but particularly the former, are always ready for the fight, and when their haunts are invaded, they often advance upon the intruder with the head and anterior part of the body almost perpendicular, the neck expanded, and an expression sufficiently indicative of the malignant purpose they have in view. To witness such a proceeding, once fell to my own lot. Walking in the vicinity of Graham's Town, I happened to excite the attention of a *Naia Haemachates*, which immediately raised its head, and warned me of my danger by the strength of its expiration; it then commenced an advance, and had I not retired, I should, in all probability, have suffered, provided I had not been fortunate enough to disable it, which possibly would not have happened, considering that the species, in common with others of the genus, is extremely active. Even though I retired, I was not satisfied the danger was past, as the flight of this snake's enemy does not always put a stop to its advance, when once commenced. An officer of the Cape corps, upon whose accuracy the most implicit reliance was to be placed, informed me that he once was chased twice round his waggon by an individual of the same species, and the pursuit might have been prolonged had not a Hottentot disabled the enraged reptile by a blow from a long stick.

* Magazine of Natural History, New Series, No. 14, page 92.



LYCODON CAPENSIS
(Reptilia—Plate V)

LYCODON CAPENSIS.—SMITH.

REPTILIA.—PLATE V. (FEMALE.)

L. suprà nitidè nigro-viridis, purpureo tinctus ; capite lineis albis reticulato, corporis squamis ad apices
albis : infrà viridi-flavus ; scutis abdominalibus 178 ; squamis subcaudalibus 37.
LONGITUDU corporis 12 unc. ; caudæ 2 unc.

LYCODON CAPENSIS, South African Quarterly Journal, No. 5, page 18, June 1831.

LYCODON HORSTOKII, Schlegel, Physiognomie des Serpens, 1837.

COLOUR.—The upper surface of the head, the back and the upper parts of the sides glossy blackish green, faintly flushed with purple, and delicately variegated with white; the latter colour is in the form of slender delicate lines upon the head, which are so interwoven as to exhibit a fine reticulated appearance; on the other parts it occurs in the shape of minute specks, one close to the point of each scale. The upper lip, the lower parts of the sides, and the under surface of the body and tail, greenish or wine yellow, the latter with a longitudinal, zig-zag, dark stripe along its centre. Eyes livid green.

The above were the colours of the individual represented in the plate, but such are not the colours most commonly exhibited by specimens of this species. All the individuals which I have seen, excepting the one described, have had the upper parts of a shining greenish brown colour, the head without variations, and the scales along the middle of the back less distinctly marked with white specks than those of the sides; the subcaudal stripe was also wanting.

FORM, &c.—Head rather short, somewhat ovate and much depressed, its sides slightly convex, more particularly towards the hindhead, which is not distinct from the neck; pupils vertical and of an oval form; eyes small, with two scales at the posterior angle, and one at the anterior; vertical plate large and triangular, occipital plates long and also somewhat triangular. Body subcylindrical, and slightly thicker at the middle than at the neck; from the former it tapers gradually to the tip of the tail, which is pointed. The scales are short, somewhat quadrangular, obtuse at the points, and disposed in transverse rows, each row, according as it may be traced, will appear either oblique, or bent and forming two sides of a triangle, the apex of which will be situated on the middle of the back. One or two of the maxillary

LYCODON CAPENSIS.

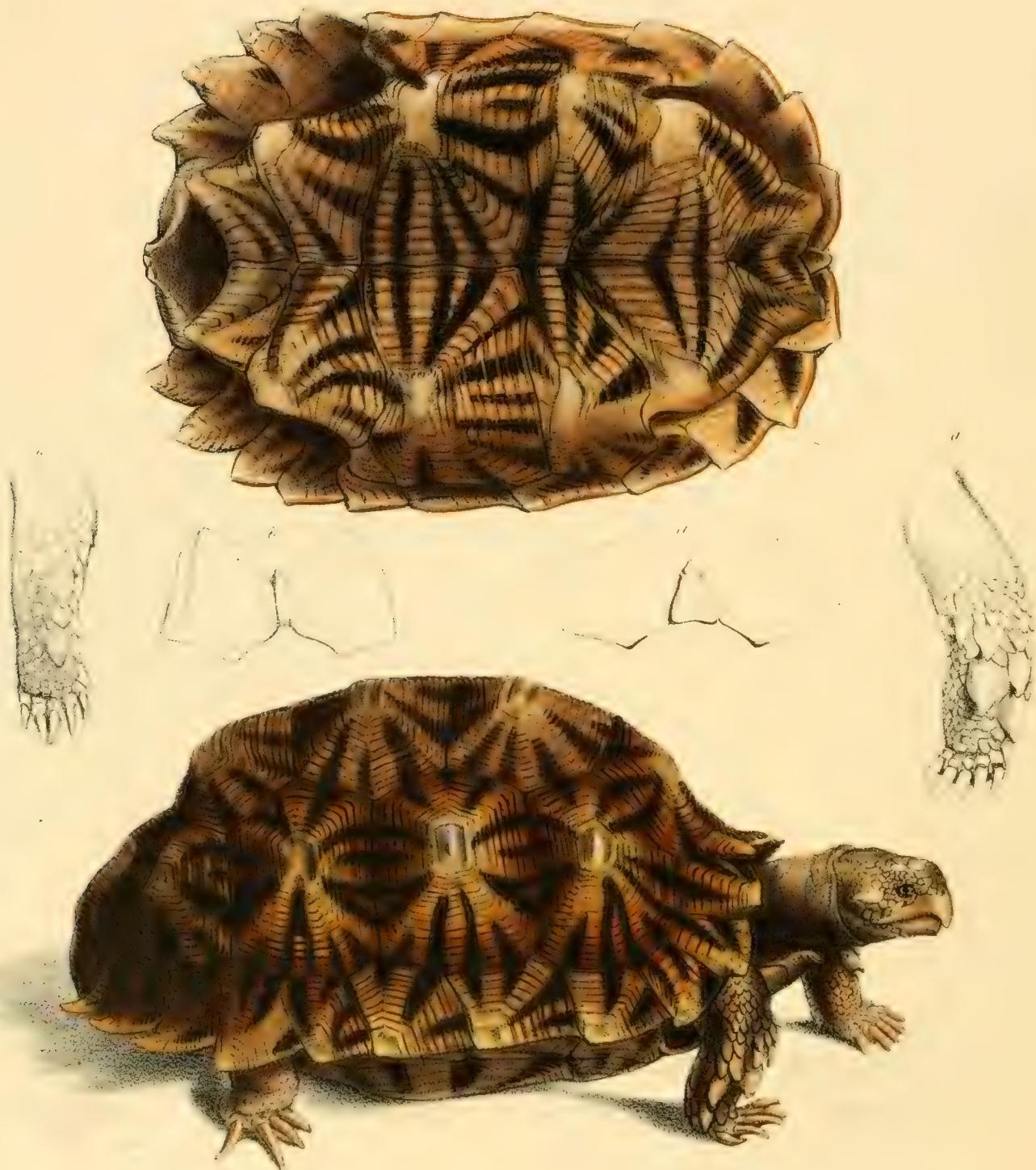
teeth of each row, near its anterior termination, considerably larger than the rest, and a similar character is distinctly exhibited at the corresponding point of each row of the lower jaw.

DIMENSIONS.

Length from the nose to the tail	12 inches.
of the tail	2 inches.
Circumference of the thickest part of the body	1 inch.

From the facts mentioned when describing the colours of the specimen here figured, it must doubtless be considered as a variety of the species, since the specimens which exhibit the other colours also mentioned are the most common. It is the only example of the description I have yet seen, and was found among some decayed wood, near to a small stream immediately beyond Kurichane, in about 25° south latitude. When, by the removal of some of the rotten masses, the reptile was exposed, it moved slowly among the remaining ones, in search of a place of concealment, and when it was interrupted in its advance it simply coiled itself up without manifesting any disposition to resist the opposition offered. A similar course I had previously observed others of the same species pursue, when attempts were made to secure them, and neither did the one here described nor the others ever move with any considerable rapidity, nor appear much in fear of their assailants. All the specimens which I have seen of this species were obtained in damp situations, and never remote from localities where they could readily and without much exertion conceal themselves if necessary, and in the latter respect they resemble most of the innocuous snakes of South Africa, which are not endowed with the powers of effecting rapid movements.

One may generally form a pretty accurate idea of what will be the speed of a snake, though observed at rest, by mere attention to the character of the locality in which it is discovered. If the locality abounds with opportunities for ready concealment, it may be inferred that its motions will be slow, but if few of these opportunities appear, the chances are, that its motions will be the opposite, and that it is of a species which trusts for its safety, principally, to its powers of flight.



TESTUDO SEMISERRATA

Teptilia _Plate 6

TESTUDO SEMISERRATA.—SMITH.

REPTILIA.—PLATE V.

T. suprà brunneo-nigra; scutarum areolis et radiis ab illis divergentibus, subochreis; infrà flavâ radiis brunneo-nigris variegatis. Scuto nuchale triangulare; pedibus anterioribus paulum supra unguis anticè squamis magnis tuberculosis obtectis; mandibulâ superiore uncinatâ.

LONGITUDU testæ 5 unc.

COLOUR.—Shell above deep reddish or brownish black, with numerous ochre or brownish yellow variegations, which are partly in the form of irregular blotches and partly of radii, the breadth of which is greatest at the margins of the plates. On the dorsal and costal plates, the areolæ are principally of a yellowish tinge, and from each ten or more yellow radii diverge and terminate by joining others of a similar description which intersect the surrounding plates. In the last-named plates one radiation generally proceeds from the anterior and another from the posterior edge of each, while three or four extend from the lateral sides, and those from the parts first mentioned, together with one from each of the lateral angles, generally divide into two limbs before they reach the margins of the plates, and by this arrangement several oblong black spots appear inclosed within these radii. The marginal plates are generally marked with three radii, the hindermost in many instances bifid prior to its joining the costal plates. Nuchal plate broadly edged and tipped with yellow. Beneath, the shell is yellow variegated with brownish black radii, each of which proceeds from the areolæ, when they exist, and increase in width as they approach the circumference of the plates; their direction is either straight or oblique, and from the manner in which they join each other, the under-surface of the shell appears varied with waved, angular or arched black stripes. Upper and under mandibles greenish yellow. Eyes dusky black. The scales of the head are a pale straw yellow, those of the neck greenish brown; the legs pale yellowish brown, with the large tubercular scales of the fore-legs and the *discs* of the small flat scales of all the legs dull yellow; claws yellowish. Tail dull greenish brown.

FORM, &c.—Shell oblong ovate and above moderately convex; its lateral outline as formed by the marginal plates is rather strongly serrated in front and behind, on the sides but slightly; its dorsal outline strongly arched towards the nuchal and caudal plates, slightly along the middle of the back. The surface of the shell above the lateral margins uneven, but none of the plates palpably projecting, as is the case in *Testudo geometrica*, *T. tentoria*, &c.; areolæ smooth and slightly depressed, the other parts of the plates rough

TESTUDO SEMISERRATA.

and irregular from their being strongly cut by numerous polygonal grooves. Nuchal plate triangular; the first and fourth dorsal plates pentagonal, the second, third and fifth hexagonal, but the form of the last is very different from the other two; the caudal plate pentagonal, its apex slightly incurved; the first costal plate rather irregular in shape and generally octagonal, some of the sides very short and indistinct, second and third plates hexagonal, the fourth pentagonal. The anterior and posterior marginal plates somewhat triangular, the intermediate ones subquadrangular; those of the first description, particularly the four last of each side, with prolonged points, each of which are inclined obliquely backwards. The sternum is slightly convex, and its anterior and posterior extremities bifurcate; the gular plates are somewhat diamond-shaped; the humeral ones large and quadrangular; the pectoral ones narrow where they are in contact with each other, and from thence gradually increase in breadth to their outer margins which are two-sided; the abdominal plates are large and square; the femoral ones broader at their outer than their inner edges, and the caudal ones are quadrangular, the outer and hinder angle being slightly prolonged and rounded at the tip. Upper surface of head closely covered with small flat and irregular-shaped scales, those immediately over eyes smallest; upper mandible cut by several vertical furrows and strongly hooked at the point, its cutting edge waved and finely dentated; lower mandible pointed, the point ascending. Neck closely coated with minute granular scales; fore-legs covered with subovate scales, among which, above the claws, are interspersed a few large tubercular ones, the form of one of which, the largest, is nearly that of a shell of the genus *Crepidula*; hind-legs coated with small delicate scales, and, internally, each has at its base a strong conical tubercle; claws of fore-feet rather short and nearly straight, those of the hinder feet much longer and slightly curved. Tail short and conical, with a small, prominent, conical tubercle on each side of its base. The length of the largest shell we obtained was nearly five inches, and as specimens of the same size, as well as of others much smaller, occurred in great abundance, we had reason to consider the largest as examples of full-grown individuals.

The districts between Latakoo and the Tropic of Capricorn abound in individuals of this species.

The shape of the nuchal plate and the form of the tubercular scales upon the fore-legs, are characters by which *Testudo semiserrata* is readily to be distinguished from *T. geometrica*, to which it closely approximates. For the appearances of these parts in both species, see Plate, *a a* *Testudo semiserrata*; *b b* *Testudo geometrica*.



VIPERA CINGULATA
(Reptilia Poiss.)

VIPERA (CERASTES) CAUDALIS.—SMITH.

REPTILIA.—PLATE VII.

V. suprà flavo-rubra, maculis aurantio-brunneis variegatis; subtus roseus; capite cordiforme, maculis duabus sagittiformibus notato, eujus una inter oculos, altera super occiput; supercilio singulo squamâ aculeatâ armato; squamis subcaudalibus caudæ aliis squamis subsimilibus.

LONGITUDO, corporis cum capite, $12\frac{1}{2}$ unc; caudæ, $1\frac{1}{2}$ unc.

Vipera ocellata, Smith. Magazine of Natural History, new series, vol. ii. Feb. 1838, p. 92.*

COLOUR.—Above yellowish red, spotted and variegated with other colours; beneath pale rose-red with a pearly lustre. The principal spots are disposed in three irregular rows along the back; those of the centre row oblong, and somewhat quadrangular; those of the other two more or less circular: They are of an orange-brown colour, and some of them are partially, others completely edged with straw-yellow; those of the middle row are in the first condition, being only margined anteriorly and posteriorly; those of the others mostly in the state last described, and the majority of them have besides a lilac coloured point toward their centre. The sides of the body are faintly freckled with small *nebulæ*, or irregular spots of the same colour as those of the back, only of a much paler tint, without variegations, and rarely placed alike in any two specimens. The upper and lateral parts of the head are variegated with similar colours, only disposed, after a different fashion, viz. in the form of angular or arrow-shaped markings on the top of the head, and on the sides in vertical bars. The former are generally two in number, one between the eyes, and the other on the occiput, and both are commonly margined anteriorly with cream-yellow. The vertical bars usually amount to four on each side, three of them cut the upper-lip, and the fourth generally terminates immediately behind the angle of the mouth. Besides the arrow-shaped marks with which the top of the head is variegated, there are usually two, or even more, circular spots intermediate between the markings particularised, and these are also frequently edged with cream-yellow. Eyes reddish orange.

In some specimens the ground colour of the upper parts is much darker than that above described, differing but little from the tint of the spots which, in such cases, are but indistinctly seen. In others again, the prevailing

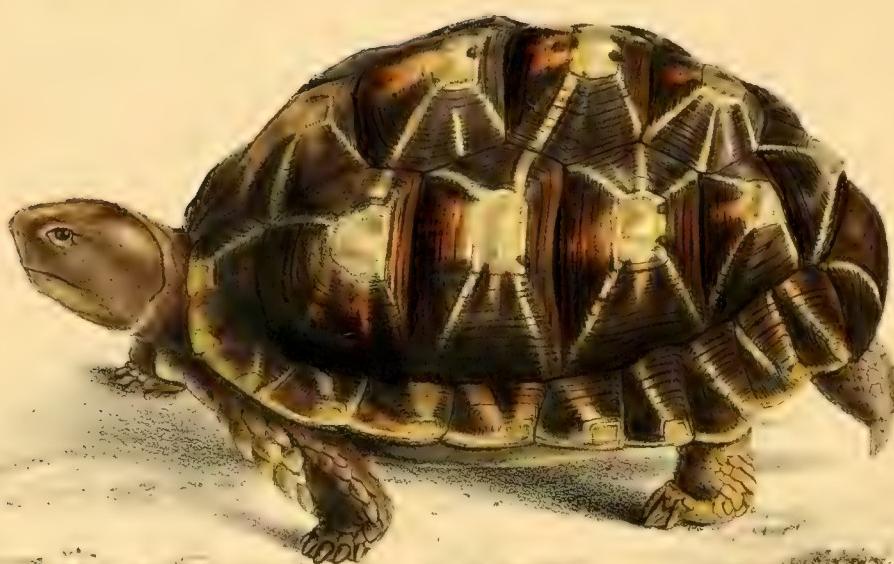
* As it does not appear probable that the genus *Vipera* will ultimately be divisible into subgenera, I have thought it advisable to substitute for *ocellata*,—a term which under such circumstances would cause some confusion,—that of *caudalis*.

VIPERA (CERASTES) CAUDALIS.

colour is quite different, being a steel or ashy grey, with the spots much darker, and tinted with the same hue. The character of the markings upon the head is also subject to great variation, and even sometimes it is entirely different.

FORM, &c.—Head distinct from the neck; body thick in proportion to its length; tail short, tapered, and pointed. The angles of the jaws are very divergent, giving a great width to the hind head; the anterior portion of the head is much narrower, the nose rounded, and the nostrils situated near its apex, each in the centre of a thick and projecting scale. Eye-brows arched, and each near its middle armed with a slender, pointed, and slightly recurved spine, of about a line or a line and a quarter in length. The scales of the anterior parts of the head, particularly around the eyes, are very small, and those between and immediately behind the nostrils are imperfectly carinated. On the hind-head they are of the same oval form as on the body, and distinctly carinated. On the back and sides they are arranged in longitudinal rows, and from the points of the scales of each row over-lapping the base of the ones immediately behind them, the *carinæ* form continuous ridges, generally about twenty-seven in number. The row on each side next to the abdominal plates consists of larger scales of a different shape and without *carinæ*. The scales of the tail resemble those of the body, and the two rows coating its under surface, which, in the majority of snakes, are different to those above, are in this species nearly alike, the only difference being, the *carinæ* are not so developed. Abdominal plates 149, subcaudal scales 27 pair; length of adult specimens about 14 inches, of which the tail generally forms nearly the ninth part.

Dry sandy districts constitute the favourite *habitats* of this viper, which manifests all that indolence of character so remarkable among the various species of the genus, and on account of which they are more dreaded by the native of South Africa, than even snakes possessed of more virulent poison, but disposed to action on the approach of danger. According to good testimony, this species will continue for days together in one position, and as it never seeks to avoid danger, however imminent, its presence is rarely discovered unless when trampled upon, and the offending parts wounded by its fangs. Though generally inactive, it is by no means so when injured; its movements are then performed with activity; and when once it seizes the obnoxious object, it retains its hold with great determination, and some considerable exertion is often required to detach it. The same may be said of most of the vipers, in which respect they differ materially from *Naia*. The various species of the latter, immediately after they inflict a wound, detach themselves, and fly to a place of concealment; while the vipers, even when detached by force, continue upon the spot where they fall, or remove but slowly from it.



TESTUDINIS
COPIDIA

TESTUDO VERROXII.—SMITH.

REPTILIA.—PLATE VIII.—MALE.

T. testâ supra nigro-brunneâ, maculis, radiisque pallidè ochreo-flavis variegatis ; infrâ flava, fasciâ longitudinali brunneâ inter scutas gulares et anum ; capite suprà subflavo ; pedibus anterioribus anticè squamis imbricatis magnis tectis ; scutis marginalibus angulum scutis costalibus formantibus.

LONGITUDU TESTÆ 3 unc. 8 lin.

COLOUR.—The upper surface of the shell liver-brown, variegated with rays and blotches of a colour intermediate between straw and ochre-yellow ; the under surface yellow, with a broad irregular liver-brown band, extending from the gular plates to the anus. The yellow blotches, which are nine in number, one towards the centre of each of the dorsal and costal plates, are very irregular in form, and include not only the whole of the *areola*, but also some portion of each plate in front of it. The rays, all of which proceed from the *areolæ*, and extend partly towards the outer, partly towards the inner sides of the plates, are four or five upon each plate, four at least generally reach to the edges of the plates near their angles ; the fifth, where it exists, is commonly shorter, and situated between the two external rays of each costal plate. Each marginal plate has two yellow rays, which diverge from the *areola*, and approach or actually reach the point of junction with the costal plates, diverging as they proceed ; the *areola* and outer edge of each of the plates are also yellow ; the *areola* and lateral edges of the caudal plate are yellow, and from the former, two yellow rays proceed, one to each of its anterior angles. The brown band, which extends along the under surface, is very irregular or deeply broken on the edges, and in several places variegated or clouded by shades of a lighter and brighter tint. Towards the anterior edge of several of the marginal plates beneath, there is a small brown mark, more or less pointed posteriorly, and a few others of a similar form proceed inwardly from the outer margins of the pectoral and costal plates. The top of the head, and the upper and lower mandibles dusky yellow ; the neck greenish-yellow, freckled with brown. The large scales covering the fore-legs anteriorly livid-yellow, the smaller ones partly brownish-black, partly greenish-yellow ; hinder legs and tail greenish-yellow ; claws a dark horn colour.

FORM, &c.—Shell, viewed from above, five-sided, anteriorly truncated,

TESTUDO VERROXII.

posteriorly pointed; upper aspect convex, under slightly arched towards the sides, flat in the middle; upper surface somewhat irregular, owing to the slight gibbosity of each plate; *areolæ* nearly flat; surface of plates marked with polygonal grooves; marginal plates more inclined to a horizontal direction than the costal ones, by which inclination an obtuse angle is formed by the two, and an appearance produced as if the first-named formed a sort of edging or cornice to the latter. First dorsal plate five-sided, anteriorly pointed; second, indistinctly seven-sided; third, fourth, and fifth, six-sided, the length of the sides in each plate different; first costal plate six-sided, the remainder irregularly five-sided; second marginal plate somewhat triangular, the remainder more or less quadrangular; nuchal plate short, rather broad, anteriorly emarginate, superiorly grooved along the centre, the sides, transversely ribbed. Shell below bifid anteriorly and posteriorly; gular plates sub-triangular; humeral, abdominal, and anal ones nearly square; pectoral and femoral ones quadrangular, the outer sides much wider than the inner ones. Upper mandible slightly hooked at the point, and its cutting edges finely dentated; lower with the point curved upwards. Head and neck covered with small scales; fore-legs anteriorly coated with large flat imbricate pear-shaped scales, elsewhere by irregularly shaped smaller ones; hinder legs and tail covered with small scales, and at the base of the latter, near the outer and hinder angle of each anal plate, there are two pointed horny tubercles, one behind the other. Claws short, straight, pointed, and slightly depressed.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length of the shell above	3	8	Breadth of the shell across the abdominal		
below	3	4	plates	3	0
			Height of the shell	2	4

Nothing is known of the *female*.

The position of the marginal in relation to the costal plates furnish us with a character by which this species is at once to be distinguished from *Testudo geometrica* and *T. semiserrata*. From *Testudo tentoria*, Bell, which has also the marginal plates disposed at an angle with the costal ones, it is to be distinguished by the greater flatness of its dorsal and costal plates, the greater size and different characters of its nuchal plate, by the figure of the shell, which in *T. tentoria* is oval, by the thinness of the large scales of the fore-legs, and other less conspicuous peculiarities.

Inhabits the districts of South Africa, near the sources of the Garriep or Orange River.



PYTHON NATALENSIS.—SMITH.

REPTILIA.—PLATE IX.

P. capite supernè maculâ olivaceo-brunneâ sagittiformi notato; capitis lateribus subflavis, lineâ longitudinali olivaceâ maculâque coloris ejusdem infra oculos variatis; dorso, lateribusque olivaceo-brunneis, maculis, striis, fasciis-que pallidè flavo-brunneis variegatis; et caudæ lateribus fasciâ longitudinali nudatâ eodem coloris; infra purpureo-album; labii superioris scutis quatuor, duabus utrinque proximis scuto nasali, emarginatis foraminibus formantibus, corporis squamis parvis et in lineis obliquis collocatis.

LONGITUDINO corporis cum capite 10 ped. 11 unc. ; caudæ 16 unc.*

PYTHON NATALENSIS, Smith.—South African Quarterly Journal, new series, p. 64. Oct. 1833.

COLOUR, &c. Though the colours of this snake are distinctly marked, yet the mode in which they are distributed, will require to be apprehended more from the coloured figure, than the letter-press description. The principal tints with which it is marked, are three—dark olive brown, dull yellowish brown, and purplish white,—the two first colours are confined to the upper and lateral parts; the last to the lower portions of the sides and belly. The dull yellowish brown, is perhaps the predominating colour on the first third of the reptile; and the olive brown by much the most abundant on the other two-thirds. On the top of the head, reaching from the nose to the occiput, is an arrow-shaped spot of the latter colour; and from that spot, posteriorly, a band of the same hue extends along the back, gradually widening as it proceeds, and having its edges on each side waved, or irregularly scolloped. On this band, reaching the commencement of the second third of the body, its width increases greatly; and in this enlarged form, it extends to the tip of the tail; its edges throughout much waved. The yellowish brown occurs in the form of irregular bars, or of waved blotches, or stripes on the first thirds of the back, and on the last two-thirds, in the shape of stripes or blotches in the olive-brown, excepting towards and on the tail, where it assumes the form of a waved, longitudinal band on each side. The sides of the head are yellowish-brown; and each side is marked with a longitudinal olive-brown

* Specimens of a much greater size are occasionally obtained.

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stripe, and a large similar-coloured blotch, the first commencing at the nostril, and ending above the angle of the mouth ; the latter situated immediately below the eye. The lower parts of the sides are also marked with irregular olive-brown spots. Lips yellowish white ; eyes dark brownish red ; spurs near *anus*, livid white. The olive-brown and yellowish-brown markings are, when imbedded in each other, generally surrounded by a margin of a different tint to the general colour of the spots ; where they are olive-brown, the edging is generally darker ; and when yellowish-brown, generally lighter. The whole surface of the snake has a strong metallic gloss in certain lights.

FORM, &c. Body fusiform. Head depressed, and scarcely distinct from the neck ; much broader behind, than before the eyes ; gape large ; two labial plates of the upper jaw on each side of nasal plate emarginated anteriorly, so that the lip in front appears perforated by four irregular holes ; pupils circular ; teeth long, pointed, slightly curved, and gently reclined ; the anterior-most ones of each row longest ; intermaxillary ones short, slender, and pointed ; anal spurs about two lines in length, slightly curved, and pointed. The muzzle superiorly, the lips, the belly, and the under surface of the tail are covered with large plates ; the other parts of head and body with scales. On the top of the head they vary in size, several of them immediately over, as well as before and behind the eyes, being much larger than the others around them : on the body they are small, ovate, and slightly imbricate, those of the three lowermost rows, on each side of abdominal plates, very large. Abdominal plates narrow transversely, their breadth little exceeding the scales immediately on each side of them ; their form, however, is different—the plates posteriorly are square, the scales semicircular. The subcaudal scales are in two rows, and larger than those with which the sides of the tail are covered ; shape the same. Abdominal plates 269 ; subcaudal scales 77. Length of body and head 10 feet 11 inches ; of tail 16 inches. The large plates, mentioned as covering the muzzle superiorly are seven in number ; a triangular one immediately behind nasal plate, the apex of which, posteriorly, is received between the two plates next in succession, and which are also somewhat three-sided, their base in contact with the middle pair, the shapes of which are quadrangular ; the last pair semicircular behind, and terminate ; about a quarter of an inch in front of a line drawn so as to connect the eyes.

This snake, or at least one resembling it in size, was formerly an inhabitant of the districts now within the Cape Colony, and the traditions of the older Hottentots abound with instances of its miraculous powers. At present it is not to be found within hundreds of miles of the boundaries of the Colony, and few specimens have been obtained nearer than Port Natal. It occasionally attains a very large size, and, according to the natives, individuals have been seen

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whose circumference was equal to that of the body of a stout man: we have ourselves seen a skin which measured twenty-five feet, though a portion of the tail part was deficient. It feeds upon quadrupeds, and for some days after swallowing food, it remains in a torpid state, and may then be easily destroyed. The South Africans, however, seldom avail themselves of these opportunities of ridding themselves of a reptile they view with horror, as they believe that it has a certain influence over their destinies; and affirm, that no person has ever been known to maltreat it without, sooner or later, paying for his audacity.

Owing to the difficulty of discriminating between certain species of *Python*, we are not prepared to maintain this reptile to be distinct from the Indian species (*Python bivittatus*, Schlegel). The characters which have been assumed as indicative of specific differences, do not appear to us to have been of sufficient value; the modifications to which they are liable in different specimens, of whose specific identity no doubt can exist, show some other characters must be discovered before certainty can be attained. The Indian species is doubtless an inhabitant of Africa, and there are several specimens of it, both from India and Western Africa, in the museum at Fort Pitt, Chatham, which are precisely similar. Between these, however, and the species we have just described, there are several well-marked differences. The scales of *Python Natalensis* are proportionally smaller than in the individuals above mentioned; their form is also different. The labial *fossæ* are more numerous in young specimens, from Western Africa and India, than in those of a similar age from South Africa; in the latter they are two upon each side, in the others, four or five; the plates on the head, also, are differently shaped and differently disposed. The pattern of the markings, when viewed in detail, is also distinctly different, though there is a sort of general resemblance. Persons who have opportunities of examining species of *Python* would do well to ascertain if the labial *fossæ* vary in number in different individuals of the same species and of the same size, also whether their number diminishes as age advances.



BUCCHIUS CAPENSIS.
(Reptilia, Pl. 10)

BUCEPHALUS CAPENSIS.—SMITH.*

REPTILIA.—PLATE X.

B. supra viridi-brunneus aut viridi-niger, squamis prope scuta abdominalia flavo-maculatis; infra flavus, tæniolis viridi-nigris transversis variegatus; labiis mandibulæque partibus inferioribus pallidè flavis.

SCUTA ABDOMINALIA, 189; squamæ sub-caudales, 106—106.

LONGITUDO corporis cum capite, 3 ped. 5½ unc.; caudæ, 14 unc.

BUCEPHALUS JARDINI, Smith, Zoological Journal, vol. iv. p. 442.

DISPHOLIDES LALANDII, Duvernoy, Ann. de Sci. Nat. tom. 26. p. 150.

DENDROPHIS COLUBRINA, Schlegel, Physion. des Serpens, p. 238, 1837.

COLOUR.—The upper and lateral parts of the head above the upper lip, and the upper parts of the body and tail vary from dark greenish brown to greenish black;† the lower parts of the sides in general more or less variegated with yellow or greenish yellow spots, one spot towards the centre of each scale, with the carina crossing it longitudinally. The upper and lower lips, and the under surface of the lower jaw, particularly towards the angle of the mouth, lemon-yellow with an orange or buff tint. The belly and under surface of the tail yellow with narrow transverse dark coloured bars, the former is the predominant colour in the majority of specimens met with, and is of a tint intermediate between lemon and orange-yellow; in many examples the two colours are nearly in equal proportions, the one being profusely mottled with spots of the other. In the specimens in which the narrow bars are distinct, each plate, and also each subcaudal scale, have one bar near to their hinder edge, and the bars vary in colour from brownish black to greenish black; the margins of the plates and the scales are semi-transparent, and of a dull amber tint. Towards the tip of the tail the subcaudal scales are gene-

* Having satisfied myself that the four snakes I described many years ago in the Zoological Journal as so many distinct species are in reality only varieties of one species, I have here rejected all the specific names by which I proposed on that occasion to designate them, and adopted a new one with a view to lessen as much as possible the chance of confusion.

† In some specimens, we find the colour distinctly greenish brown, in others, greenish black or brownish black, and in many it is intermediate between these colours.

BUCEPHALUS CAPENSIS.

rally without the yellow variegations, and are everywhere of the same tint as the edges of those which are situated nearer to the base of the tail. Eyes, shining brown. In some specimens of this variety very faint remains of yellow markings are occasionally to be seen upon the scales of the back and sides, clearly indicating that had they been secured in an early stage of their existence, they would have required to have been classed with the variety next to be described.

FORM, &c.—Head distinct from the neck; body moderately slender and fusiform, the thickest part rather nearer to the head than the tip of the tail; form subcylindrical, the belly flattened and very broad; tail long, tapered, and pointed, its figure somewhat cylindrical, the under surface slightly flattened. The head is short, rather clumsy, and distinctly quadrangular, its breadth and height nearly equal; the upper surface is slightly convex, the sides almost perpendicular, with a slight longitudinal concavity in front of the eyes; the nose is obtuse, almost truncated; the lips are coated, each with a row of large quadrangular scales. The mouth is armed with six rows of teeth, and the two or three last teeth of each *maxillary* row are much larger than any of the others, and grooved throughout their whole length. They point almost directly backwards, and are either firmly fixed upon the maxillary bones or slightly moveable, and are in a great measure concealed by the pulpy sheath, with which they are encircled. Within this sheath there are also a number of recumbent fangs, evidently destined to supply such of the fixed ones as may from time to time disappear. All the rest of the teeth are small, cylindrical, recurved, and pointed. The salivary* and lachrymal glands are moderately large. The eyes are very large, the corneæ slightly convex, and the pupils circular. The nostrils are situated towards the middle of the nasal plates, nearly circular, and opening outwards and backwards. The plates covering the upper surface of the head are ten in number; the rostral one is rather small, subtriangular, or indistinctly five-sided, its apex lies between the anterior frontal plates, and its base forms the margin of the upper lip, and is indented with a deep crescent-shaped emargination; the anterior frontal plates are four-sided, the hinder and outer sides longest; the posterior frontal plates considerably larger than the anterior ones and of an irregular quadrangular shape, the irregularity depends principally upon the elongation of the anterior and outer angle of each scale which extends down-

* M. Duvernoy is of opinion (*Annal. de Scienc. Nat.* tom. 26. p. 149.) that the anterior portion only of the glandular structure which is found under the integuments of the upper lip is for the secretion of saliva: the posterior portion, he thinks, is distinct from the anterior, and is adapted for the secretion of poison. We have tried, but in vain, to discover grounds for entertaining a like opinion.

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wards on the side of the head to join the loral scale between the anti-ocular and rostral scales, the hinder sides of the posterior frontal plates are slightly arched or indistinctly two-sided; the vertical plate is indistinctly six-sided, the two hinder sides extend backwards and inwards, and terminate in an obtuse angular point which lies in contact with the line where the two occipital plates join, the lateral sides of the plate are longest; the palpebral plates are rather narrow and lengthened, the lateral sides of each are nearly parallel, the anterior extremity somewhat rounded, and the hinder one, which is the broadest, indistinctly two-sided, the innermost of the two sides being considerably longer than the outermost; occipital plates large, irregularly five-sided, and considerably wider at the base than the apex, the last, though nearly square, is nevertheless slightly two-sided. Rostral scale small, oblong, and quadrangular; loral scale also small and quadrangular; anterior ocular scale quadrangular, concave, and broadest posteriorly, its upper and hinder angle extending in the form of an angular elongation between the posterior frontal and palpebral plates, in which situation it forms a portion of the covering of the upper surface of the head. Post-ocular scales three, forming a semicircle round the outer canthus of the eye; temporal scales four or five in number, smooth, unequal, in regard of size, and somewhat six-sided. The scales on the back and sides of the neck, close to the occipital plates, small and smooth, some of them quadrangular, others more or less diamond-shaped, all rather irregularly disposed; the scales behind these are carinated and disposed in arched transverse rows, the convexity of each row towards the head. The form, &c., of the scales vary at different parts of the rows; the one which, from its situation, may be called the dorsal scale is narrow towards the base, and broad and semicircular at the point, this scale has a distinct carina extending along its centre. The scales on each side of the dorsal one are somewhat ovate, their points either angular, subtruncate, or obtuse, the upper edge of each of these scales is nearly a straight line, the lower, very convex, and much arched; the carina close to the superior edge, and generally terminating on the upper margin at some distance behind the points of the scales; the two scales nearest to the abdominal plates on each side are larger than the others, very wide at the base, and rounded at the point, their figure is somewhat triangular; the carina in these is nearly central. The hinder margin of each row of scales overlaps more or less of the base of the row immediately behind it, and the outer edge of each of the scales which compose the rows is more or less covered by the inner edge of the scale immediately external to it, and in this way there is a double kind of imbrication. As far as the base of the tail the above are the characters and

BUCEPHALUS CAPENSIS.

mode of arrangement of the scales. On the tail, however, different characters exist, the scales covering it, instead of being carinated, are quite smooth like those on the temples and nape, and are more or less six-sided, one side being always formed by the base, and another by the apex, the last is generally very short, and scarcely to be appreciated in many of the scales, more particularly in those towards the tip of the tail. The point of the tail, in many specimens is formed of a scaly pointed tubercle, in others it is covered with a number of small imbricate scales. The abdominal plates are slightly arched, the convexity backward, their extremities arched or slightly semi-circular; the subcaudal scales are disposed in two rows, and each scale is distinctly six-sided till near the point of the tail, where they become more or less distinctly four-sided: in the six-sided scales the sides forming the extremities are much shorter than the two middle ones. The skin of the neck, and of rather more than the first half of the body, is more than sufficient to enclose the parts contained within it, and is very loosely attached to the parts it encloses; in consequence there is a superabundant portion, which portion is usually disposed in two longitudinal folds, one at each side of the abdominal plates; these folds are always in existence, except when the gullet and stomach are fully distended with food. On the sides and back of the head, and also on the hinder portion of the body and tail, more especially on the latter, the skin is not more than sufficiently extensive to cover the parts it encloses, and in these situations it is firmly and closely united to the subjacent parts. The usual length of an adult specimen of this variety is from $4\frac{1}{2}$ to 5 feet, of which the tail generally forms between a fourth and a fifth part: individuals are occasionally found, however, exceeding 6 feet. The following are the measurements of the specimen figured, and of two others now before us; also the number of abdominal plates and subcaudal scales existing upon each:—

SEX OF SPECIMEN.	LENGTH FROM NOSE TO BASE OF TAIL.		LENGTH OF TAIL. Ft. In.	SUBCAUDAL PLATES. No.	SUBCAUDAL SCALES. No.
	Ft.	In.			
Male	3	11	1 0	188	65-65
Male	3	5 $\frac{1}{2}$	1 2	189	106-106
Female	3	9	1 1	184	94-94

The *Female* is never so freely variegated with yellow on the sides as the male, and many specimens are met with in which merely the centre of each of the scales adjoining the abdominal plates is faintly tinted with greenish yellow. The yellow of the abdominal plates is also of a duller tint in the female, and often with a strong tinge of green.



BUCEPHALUS CAPENSIS. Var A

(Reptilia. Plate II.)

BUCEPHALUS CAPENSIS.

VARIETY A.—Plate XI.

BUCEPHALUS BELLII, Smith, Zoological Journal, vol. iv. p. 442.

COLOUR.—The upper parts of the head greenish black, variegated with yellow spots and waved angular lines,* the lateral parts yellow or greenish yellow. The back, the sides of the body, and the upper and lateral parts of the tail blackish green, or greenish black, the two first crossed with narrow irregular greenish yellow lines, one line to each row of scales; and formed of a series of small oval spots, one of which exists near the centre of each scale. On the tail, instead of transverse lines, there are a series of irregularly disposed yellow spots, one toward the centre of each scale, generally larger than those which exist upon the scales of the body. The abdominal plates are of a greenish yellow colour, and each is marked near to its hinder edge by a narrow transverse greenish black line, immediately before which, in many individuals, there is a whitish one with a mother-of-pearl tint. Subcaudal scales greenish yellow, narrowly edged with greenish black. Eyes silvery grey, grass-green, or clear brown. The depth of the ground-colour varies considerably in different specimens of this variety, as does also the tint of the light markings; in some, the former colour approaches to olive-green, or even grass-green.

FORM, &c.—The figure of the head and body, and the appearances of the scales and character of the skin the same as particularized in the description of Plate X. The following are the measurements, &c. of four specimens of this variety:—

SEX OF SPECIMEN.	LENGTH FROM NOSE TO BASE OF TAIL.		LENGTH OF TAIL. Ft. In.	ABDOMINAL PLATES. No.	SUBCAUDAL SCALES. No.
	Ft.	In.			
Male	3	5½	1 2½	187	117-117
Male	3	2	1 2¾	191	117-117
Male	3	3	1 3	177	125-125
Female	2	4	1 0	184	125-125

The *Female* is coloured nearly as the male.

* In many specimens of this variety the upper surface of the head is yellow, or greenish yellow, mottled with greenish black spots or lines.

BUCEPHALUS CAPENSIS.

VARIETY B.—PLATE XII.

BUCEPHALUS TYPICUS, Smith, Zoological Journal, vol. iv. p. 441.

COLOUR.—The head, the back, the sides of the body, and the upper parts of the tail, a clear reddish or yellowish-brown, the depth of the tint different in different individuals, but always lightest at and towards the extremities of the abdominal plates. The under surface of the head, the belly, and the under parts of the tail, either a pale wood-brown, or a wine-yellow, and more or less variegated with small spots of yellowish brown. Eyes in some silvery grey, in others light grass-green.

FORM, &c.—The general figure of this variety as well as the shape of its head, and the characters and distribution of its scales and plates, the same as in the varieties already described. The following are the measurements, &c., of two specimens :—

SEX OF SPECIMEN.	LENGTH FROM NOSE TO BASE OF TAIL.		LENGTH OF TAIL. Ft. In.	ABDOMINAL PLATES. No.	SUBCAUDAL SCALES. No.
	Ft.	In.			
Male	3	7½	1 3	190	116-116
Male	3	5½	1 2½	178	101-101

The *Female* of the same colour and figure as the male.

YOUNG.—PLATE XIII.

BUCEPHALUS GUTTURALIS, Smith, Zoological Journal, vol. iv. p. 442.

COLOUR.—The upper and lateral parts of the head, above the upper lip, clear yellowish brown, inclined to honey-yellow; the upper and lower lips cream-yellow. The back and upper part of the sides greenish black, variegated with narrow transverse bars, consisting in part of small greenish white spots, and in part of narrow longitudinal lines; the spots are situated towards the outer edges of the scales near their points, and never exceed one on a scale; the lines are in the course of the carina, and rarely extend beyond its base. The lower portions of the sides of the body, and the under surfaces of the body and tail, cream-yellow, freely freckled, or marked with livid yellowish brown and the throat besides is variegated with one or more transverse blotches or bars of a reddish orange colour. In many specimens the hinder edge of each abdominal plate is marked with a narrow



ECHIS CAFENSIS var F
(Reptilia-Plate 12)



BUCEPHALUS CAPENSIS. (Young)
(Reptilia. Plate 13.).

BUCEPHALUS CAPENSIS.

dark coloured bar. The upper and lateral parts of the tail olive-brown, with a purplish tint. In some individuals the last half, or even the last two-thirds of the body, is also of the last mentioned colour, and the parts of the back only towards the head are of the greenish black hue.

FORM.—The figure and arrangement of the scales are the same as in adult specimens. The head is broader in proportion to the neck than in a full-grown specimen, and the eye is very large. The following are the measurements, &c., of three young specimens :—

SEX OF SPECIMEN.	LENGTH FROM NOSE TO BASE OF TAIL. Ft. In.	LENGTH OF TAIL. Ft. In.	ABDOMINAL PLATES. No.	SUBCAUDAL SCALES. No.
Male	0 10 $\frac{1}{4}$	0 3 $\frac{3}{4}$	180	103-103
Male	1 4 $\frac{1}{2}$	0 6	188	112-112
Female	1 8	0 9 $\frac{1}{4}$	175	91-91

The colours of the *Female* scarcely differ from those of the male.

It is only within the last few months, during which I have been from time to time occupied in attentively examining all the specimens I collected in South Africa, of what is commonly called the *Boom-slange*, that I have been able to satisfy myself of the accuracy of M. Schlegel's conclusion, namely, that the four reptiles I had described as so many species, were only varieties of one species. At the time I penned the descriptions which were published in the Zoological Journal of London, in 1829, I had seen but comparatively few individuals of each sort, and not an instance of one partly coloured after one fashion, and partly after another. I have now, however, examined several individuals so circumstanced; and from having found the anterior parts coloured, as in the variety A, and the hinder parts as in the variety B, or *vice versa*, I am consequently compelled to consider this snake as one which varies extremely in regard of its colouring; and, therefore, to cancel the remark I have made in reference to the group, in my observations upon *Bucephalus viridis* (*Reptilia*, Plate III.), which, it may be remarked, will require now to be viewed simply as a variety of *B. Capensis*. The figures now published will give an accurate idea of four of the most distinct varieties, and the only ones which we have met with, which do not exhibit more or less of the colouring of two, or even of three, of the different varieties.

The same reasons which induced us in 1829 to consider the *Boom-slange* as a fitting type for a distinct group, still incline us to hold it as such; and we must see better grounds than those advanced by M. Schlegel, before we consider it can be classed with propriety in *Dendrophis*. The peculiar form and arrangement of the scales of this snake afford characters by which it is to be readily distinguished from the species of that genus; and the singular character of the rudimentary fangs which exist at the hinder extremity of the maxillary rows of teeth, also concur to justify its removal. As this snake, in our opinion, is not provided with a poisonous fluid to instil into wounds which these fangs may inflict, they must consequently be intended for a purpose different to those which exist in poisonous reptiles. Their use seems to be to offer obstacles to the retrogression of living animals, such as

BUCEPHALUS CAPENSIS.

birds, &c., while they are only partially within the mouth; and from the circumstance of these fangs being directed backward, and not admitting of being raised, so as to form an angle with the edge of the jaw, they are well fitted to act as powerful holders, when once they penetrate the skin and soft parts of the prey which their possessors may be in the act of swallowing. Without such fangs escapes would be common; with such they are rare.

The natives of South Africa regard the *Boom-slange* as poisonous; but in their opinion we cannot concur, as we have not been able to discover the existence of any glands manifestly organized for the secretion of poison. The fangs are enclosed in a soft pulpy sheath, the inner surface of which is commonly coated with a thin glairy secretion. This secretion possibly may have something acrid and irritating in its qualities, which may, when it enters a wound, occasion pain and even swelling, but nothing of greater importance. The *Boom-slange* is generally found upon trees, to which it resorts for the purpose of catching birds, upon which it delights to feed. The presence of a specimen in a tree is generally soon discovered by the birds of the neighbourhood, who collect around it, and fly to and fro, uttering the most piercing cries, until some one, more terror-struck than the rest, actually scans its lips, and almost without resistance becomes a meal for its enemy. During such a proceeding the snake is generally observed with its head raised about ten or twelve inches above the branch round which its body and tail are entwined, with its mouth open, and its neck inflated, as if anxiously endeavouring to increase the terror which it would almost appear it was aware would sooner or later bring within its grasp some one of the feathered group. Whatever may be said in ridicule of fascination, it is nevertheless true that birds, and even quadrupeds, are, under certain circumstances, unable to retire from the presence of certain of their enemies; and, what is even more extraordinary, unable to resist the propensity to advance from a situation of actual safety into one of the most imminent danger. This I have often seen exemplified in the case of birds and snakes; and I have heard of instances equally curious, in which Antelopes and other quadrupeds, have been so bewildered by the sudden appearance of Crocodiles, and by the grimaces and contortions they practised, as to be unable to fly or even move from the spot, towards which they were approaching to seize them.

C O L U B E R C A N U S
(Reptilia.—Plate 14.)



COLUBER CANUS.—AUCT.

REPTILIA.—PLATES XIV. XV. XVI. and XVII.

ADULT.—PLATE XIV.

C. suprà livide nigro-brunneus, subtus pallide nigro-purpureus; apicibus squamarum versus scutas abdominales nigro-brunneis; scutarum abdominalium marginibus posterioribus pallidioribus; oculis brunneis.

LONGITUDU ADULTI, 5 ped. 10 unc. ad 7 ped.

AMMOBATES AFRICANUS EX GUINEA, *Seba*, Thes. tom. ii. p. 82, fig. 2.

COLUBER AMMOBATES EX GUINEA, *Shaw*, General Zoology, vol. iii. part ii. p. 481.

COLUBER CANUS, *Merr.* Beitr. vol. iii. p. 15, pl. i.

— Schlegel, Essai sur la Physionomie des Serpens, p. 155, pl. 6, fig. 7 & 8.

COLOUR.—Above deep livid blackish brown; below pale livid blackish purple, with two or more of the rows of scales on each side of abdominal plates of the latter tint, except their tips, which are of the colour of the back; the hinder edge of each abdominal plate, and of each subcaudal scale is lighter than the parts in front of it, semi-pellucid, and has a pearly lustre. Eyes dark liver-brown. These are the markings and colours most frequently observed in adult specimens, but many individuals occur in which the colour of the upper parts is of a lighter shade than the one described, and others in which it is much darker, being actually a livid black, with a shining gloss. The gloss is observed to prevail in a greater or less degree in every specimen.

VARIETY A.—PLATE XV.

COLOUR.—The head, back, and sides greenish brown, variegated with blackish brown spots, disposed in three or four longitudinal rows, one along each side, the other two, whether connected or separate nearly in the course of the centre of the back. When they are united so as to appear one irregular row, the points of junction are the inner (mesial) and anterior angle of a spot of one side, and the inner (mesial) and posterior angle of one of the other side, hence exhibiting a tessellated appearance or a likeness, in arrangement, to two rows of dark squares on a chess-board: the spots are either of a uniform colour throughout, or they are varied with small marks or serrated lines of a white or yellowish white colour. The lower parts of the sides and the under parts intermediate between a straw and wine-yellow; the abdominal plates, particularly those at a distance from the head, blotched, or

COLUBER CANUS.

extensively marked with a livid hair-brown colour; the hinder edges of the abdominal plates semi-pellucid and shining; the tips of the scales covering the lower parts of the sides, are similar in colour to the back. Sides of the head the same colour as the upper surface, the tint lighter, and each is marked with two somewhat vertical stripes, one directly under the eye, the other between the hinder canthus of the eye and the angle of the mouth. Eyes light reddish brown.

VARIETY B.—PLATE XVI.

COLOUR.—The back and upper portions of the sides reddish orange; the tint deeper at some parts than at others. The parts so coloured are crossed with irregular broad bars of a pale brownish red colour, and these bars are narrowly edged here and there with dark blackish brown; the latter colour, wherever it exists, is confined to the base of the scale, immediately external to the transverse bars. The lower parts of the sides light reddish orange, shaded with brownish purple red, and vertically crossed by the prolongations of the brownish red bars already noticed, which as they descend become lighter, and are marked towards their terminations, which are near the abdominal plates, with an irregularly shaped spot of a lemon-yellow colour, and not unfrequently with a second of blackish brown, immediately or at some little distance below the light mark. The lower portions of the sides and belly intermediate between sienna and lemon-yellow, and the latter is variegated by many of the abdominal plates being coloured transversely with livid hair-brown. Sides of head similar in colour to the belly, and each is marked with two vertical stripes, disposed as described in Variety A; eyes light reddish brown.

YOUNG.—PLATE XVII.

COLUBER CANUS, *Lin. Mus. Ad. Fr. i. p. 31. t. ii. fig. 1.*—*Shaw's General Zoology*, vol. iii. part ii. p. 499.

COLUBER MARGARITACEUS, *Merr. Beitr. ii. p. 42. pl. 9.*—*Daud. Rept. vi. p. 419.*

COLOUR.—Above pale yellowish brown, variegated with quadrangular spots, and irregularly waved and serrated longitudinal bands of a deep orange-coloured brown; most of the spots are darkest at the margin, which is umber-brown, and exterior to this colour there is generally a narrow edging of pearly white. Head above light yellowish brown, variegated particularly along the centre with deep orange-coloured brown. The sides of the head, the lower portions of the sides of the body, and all the under parts pearly white; the sides are marked with reddish orange, or orange-brown spots in





PLATE LXXXVII.
THE BRAZILIAN BOA CONstrictor.
Lithograph by J. E. Gray.



COLUBER CANUS, (YONCE.)
(Reptilia—Plate I⁷)

COLUBER CANUS.

the form of a cross, and the under parts with transverse blotches of the latter colour, either at the extremities of the plates, or towards their centres, or at both. In some specimens the spots are disposed in four regular rows; in others they are in two rows, one on each side, and each spot shaped like a sand glass, being narrow in the middle, and widest at the extremities.

FORM, &c.—Figure subfusiform, and somewhat quadrangular in young and middle-aged individuals; subcylindrical in adults; head quadrangular, rather small, posteriorly as wide as the neck, anteriorly narrow, and terminating in an obtuse point; side of head behind eye convex; portion of the side in front of eye flat and perpendicular. Gape rather large, and the angles of the mouth considerably behind the eyes. From the head the body gradually increases in thickness till it reaches its extreme, which is generally about midway between the nose and anus; from that point it gradually decreases towards the tail, which is in most specimens thicker and shorter, in proportion to the total length, than in the majority of reptiles of this genus. The point of the tail, particularly in adult specimens, is commonly blunt and rounded. The plates covering the upper surface of the head, including the labial, a portion of which is so reflected as to cover the anterior extremity of nose, are ten in number, viz. 1 labial, 2 nasal, 2 frontal, 2 supra-ocular, 1 vertical, and 2 occipital plates; the labial at its base, which constitutes a portion of the edge of upper lip is notched, the notch being a curve, the convexity of which is directed upwards; the shape of this plate is triangular, its apex reaching the point at which the nasal plates come in contact anteriorly; the vertical plate somewhat triangular, and more or less distinctly six-sided; its apex lying between the occipital plates; labial plates of upper lip six or seven, those towards angles of mouth largest, of lower lip eleven or twelve, exclusive of the central one, covering the apex of the lower jaw; postocular plates generally two, anti-ocular plates one or two. Eyes small and deeply set; nostrils small, widest behind, pointed in front, and situated much nearer to the point of the nose than the eye. Scales of the body rhomboidal and disposed in rows, which run obliquely across the body from the abdominal plates on one side to those of the other, each row generally consisting of twenty-seven scales; subcaudal scales six-sided, the two central sides longest; the tip of the tail usually covered with a hard elastic, and somewhat horny sheath, the apex of which is either blunt or aculeated. The abdominal plates vary in number in different specimens, ranging from 172 to 209; the subcaudal scales from 60 to 84, and there is no reason for supposing that the number is in proportion to the size of the specimen. The usual length of an adult specimen is from five to six feet, but individuals are frequently obtained which measure even more than seven feet.

COLUBER CANUS.

Scarcely are any two specimens of this snake marked and coloured alike: hence, as regards it, neither the form of the spots nor the tints of the colours are of any real value as diagnostic characters. Though such is the case, it must, nevertheless, be admitted, that there exists in specimens certain general resemblances which enable the eye that has become familiar with the appearance of one or two specimens to recognize without much difficulty, all the other modifications which present themselves. The colours most commonly noticed in adults are those represented in Plate XIV.; but many individuals are obtained in which the colours are lighter, and others in which they are much darker. The variety figured in Plate XV. is less common, and although some diversity occurs in the arrangement of the spots in different specimens, yet there is never that discrepancy which is calculated to raise a doubt as to the identity of any two real examples of the variety. Comparatively rare as this variety is, the one represented in Plate XVI. is still less frequently procured, and specimens so coloured are very seldom obtained; that is, the ferruginous tinge is rarely seen of such a depth, though specimens in which it exists of a lighter hue are not very uncommon. The young, as figured in Plate XVII., exhibits the appearances most characteristic of that age; and although many examples are procured in which the configuration of the spots and the fashion of the bands are more or less varied, yet there is that in all of them which clearly indicates their species. The colours of the young are also variously modified, but not to such a degree as those of adults or half-grown specimens.

Each of the kinds represented are considered by the European settlers and the aboriginal inhabitants of Southern Africa as distinct species, and that figured in Plate XIV. is known throughout the colony by the appellation of *Zwarte Slang*, or black snake. Adults and middle-aged individuals are generally found upon dry plains, especially those of which the soil is loose and sandy, and whose surface bears a moderate sprinkling, at least, of dwarf shrubs. The young, again, are commonly discovered upon stony hillocks or rising ground in the neighbourhood of plains. Full and half-grown specimens conceal themselves up in holes or subterranean burrows, except when hunger or a desire to bask in the sun urges them to appear above ground; and if they are discovered whilst so engaged, they generally fly to the nearest hiding places. Though such is their general habit, it often occurs that they act otherwise, and await the approach of man without any appearance of fear. On such occasions they manifest considerable boldness, and if pressed or closely assailed they prepare for battle, by raising the head and eight or ten inches of the body almost perpendicular, at the same time alternately darting the tongue out of the mouth, and retracting it with great velocity. When in the first instance they fly, it sometimes happens, if they be pursued, that they suddenly turn upon their pursuers, and evince a disposition to act on the defensive. The strength of a full-grown specimen is very great, and I have myself, more than once, had my hand benumbed by permitting one to wind its body spirally round my arm while holding its head in my hand. The moment it is satisfied that its body is properly coiled, it throws the muscles into a state of violent contraction, which produce a degree of pressure that immediately becomes almost unsupportable. The consequence of such pressure is soon evident; the parts below those, round which the body is turned, become benumbed and powerless; the fingers lose their ability to detain the head, and the moment the latter gets free, the body is instantly uncoiled by the will of the reptile, which then falls to the ground.

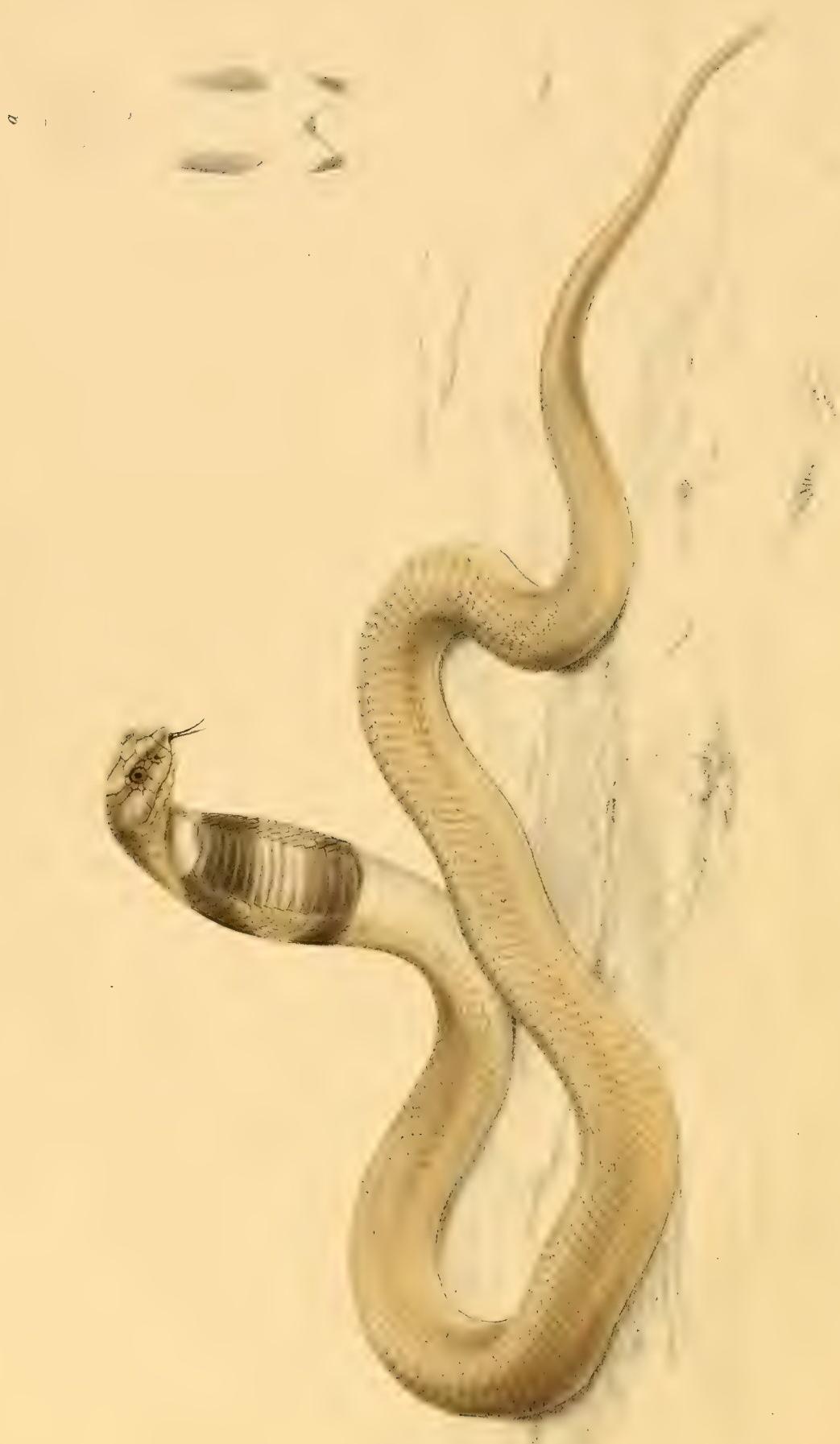


N A J A H A J E. (Var. A.)
(Reptilia.—Plate. 18)

NATA HANAE, Vol. 15
of the Nat. Mus.







N A I A H A J E. (Young
(Reptilia—Plate, 2.)

NAIA HAJE.—*Merrem.*

REPTILIA.—PLATES XVIII., XIX., XX., AND XXI.

N. flava aut purpureo-brunnea; partibus inferioribus pallidioribus saepe maculis transversis rubro-brunneo-notatis; figurâ subcylindracea, versus caudam fortiter attenuatâ.

LONGITUDU inter 5 et 6 pedes.

ECHIDNA FLAVA, *Merr.* Tentam. System. Amph. p. 154.

NAIA NIGRA, *Smith.* Magazine of Natural History, vol. ii. 1838.

GEEL COPELL, BRUIN COPELL, and SPUUGH-SLANG of the Cape colonists.

COLOUR.—The majority of the specimens of this species, which are found in South Africa, are either entirely yellow or purplish brown, though a considerable number occur, also, in which both these colours exist more or less distinctly in the same individual. The depth of the general colour varies considerably in different specimens, particularly in those exhibiting the yellow colour, being observed of every shade between straw-yellow and clear reddish yellow. In specimens which are partly of a yellow and partly of a purplish brown colour; the latter tint is generally found upon the head, neck, and upper parts of the tail. In all the three kinds, the upper parts are always of a deeper tint than the lower parts, and in the majority of specimens the belly is mottled, from being more or less crossed by irregular blotches, or incomplete bars of a reddish brown colour. The abdominal plates, and the subcaudal scales have a slight pearly lustre, and in some they approach almost to a pearly white.

FORM, &c.—Figure nearly cylindrical, with the belly a little flattened; the greatest thickness of the body is rather nearer to the head than the tip of the tail, and from the thickest part it tapers towards both extremities, the decrease in thickness occurring more rapidly, and to a much greater degree, towards the latter than the former; so that the tail towards the tip is scarcely so thick as a common writing quill. The head is considerably wider than the neck, the greater width arising principally from the lateral bulge which exists on each side of the hindhead, and which gives to this snake its peculiarly hideous and savage appearance. The width of the head is much greater than its depth; its upper surface is flat, and the occipital scales appear very large

NAIA HAJE.

as compared with the other plates; they are irregularly five-sided, two sides referable to the external margin of each, one to the point, one to the base, and the fifth extends the whole length of the inner side. The sides of the head before the eyes are nearly perpendicular, behind the eyes prominent and convex: the nose is rather blunt, and the nasal plate, which is large, has towards the margin of the lip a deep semicircular concavity, the convexity of which is directed upwards; anteocular scales one, postocular scales generally three; the last but one of the labial scales of the upper lip very large, and in adult specimens generally reaches as high as the postocular scales, and covers a portion of the sides of the head, the remaining parts of the sides are covered by a few large irregular scales, excepting in young specimens, in which these scales are out of proportion small, as compared with what they are in adults. The scales of the hindhead and the commencement of the neck irregular as regards size, each with four distinct sides, and two other more or less developed, according as the base and apex of each scale are more or less pointed. The scales on the other parts of the neck and body are lengthened, rather narrow, and of a more or less ovate form, and are disposed in lines, which may either be traced as running obliquely across from one side of the abdomen to the other, or as forming angles on the middle of the back, with the point of each angle considerably behind the extremities of these lines, which will be understood best by reference to the appearances exhibited in the plates. Approaching the tail the scales change their character, though they retain the same mode of arrangement; instead of being ovate they assume a somewhat quadrangular form, diminish in length and increase in width, and the sides constituting the base and apex are oblique. On the tail, again, they exhibit a different figure, one more approaching to that of the scales of the hindhead being more or less six-sided, the two sides constituting the base and apex being more or less developed: the point of the tail is either blunt or acuminate, and in either case is covered with a corneous sheath. The skin of the neck is loose, and too capacious for the parts it has to cover: hence, when not excited, the exuberant portion is disposed in two folds, one along each side, close to the abdominal plates. The skin of the body is moderately loose, but not too large for the parts beneath it, and that of the tail is intimately united to the internal parts, and not to be raised in the least, except the connecting membrane be destroyed. The abdominal plates are moderately wide, and the posterior edge of each is longer than the anterior, and terminates in an angle between two of the scales of the inferior lateral row: the subcaudal scales six-sided, the angle formed by the union of the two external sides received between two of the

NAIA HAJE.

lateral scales, and the internal angle between two of the subcaudal scales of the other side. The number of abdominal plates varies from 200 to 227, and the number of subcaudal scales from 53 to 67. The eyes are rather large, and though not sunk in the orbit, appear rather deep from the sides of the upper lip, and the supraorbital scales being very protuberant.

VARIETY A. (PLATE XVIII.)

Ground colour either a pure or a reddish yellow, the depth of the tint different in different individuals, but always lightest on the under parts. The variegations, which consist of narrow longitudinal spots, or streaks, are of an umber-brown or reddish brown colour, and vary in respect of number in every individual specimen; in some examples they are numerous, and on some places confluent; in others they are few, and hardly to be perceived, those snakes being just in the stage which precedes their becoming what would be regarded as specimens of yellow Copells, already described. The abdominal plates, and in some individuals the subcaudal scales also, are more or less mottled with umber-brown, or reddish brown variegations, which always extend transversely, instead of longitudinally, and sometimes pass from one extremity of the plate to the other. Eyes chesnut brown.

VARIETY B. (PLATE XIX.)

Ground colour a rich umber-brown, more or less freely mottled with stripes, spots, or blotches of gamboge-yellow and bright chesnut-brown. The abdominal plates are generally a dull brownish purple-red, and towards the head, generally tinted here and there with yellowish brown, and spotted with yellowish white. The tail, both above and below, generally livid blackish brown. Eyes deep chesnut brown.

VARIETY C. (PLATE XX.)

Colour an uniform livid blackish brown, the livid tinge strongest on the under parts, forming almost a sort of purplish slate-colour, which is very dark and shining towards the head. The abdominal plates posteriorly have each a light semipellucid margin, and the base of each plate, which is covered by the plate in front of it, and also the portions of the scales of the back and sides, which are generally covered by the adjoining scales, are of a bright chesnut colour, best seen in dried skins. Eyes bright chesnut-brown.

NAIA HAJE.

YOUNG. (PLATE XXI.)

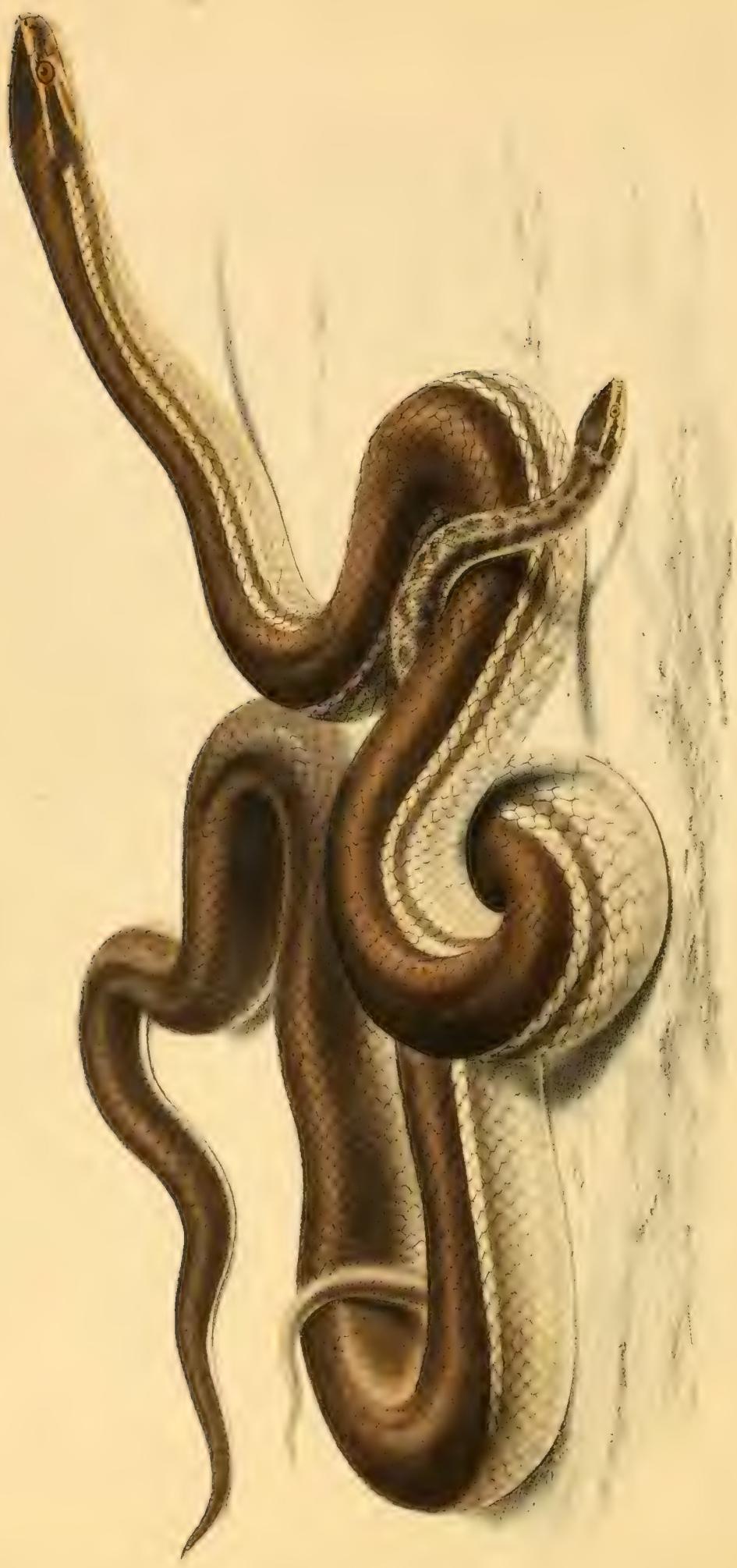
Colour intermediate between straw-yellow and pale cream-yellow, the only variegations being two brownish-red collars upon the throat, the extremities of each of which are visible upon the sides of the neck above ; and those of the last collar are generally connected by a narrow angular bar, of the same colour as the collar itself, as is shown in Figure A. Eyes light chesnut-brown.

If this reptile be specifically different from the *Naia Haje* of Northern Africa, I have not, after closely comparing them, been able to discover the differences which, in my opinion, could justify me in regarding them as distinct. I have not been able to perceive greater discrepancies between some of the Cape individuals and those collected in Egypt, than I have been able to find between some of what may be regarded the more typical examples of Southern Africa and others of the same country, which may be viewed as presenting aberrant or less common characters. The young of the Cape reptile exactly corresponds with the young of *Naia Haje*, as figured by M. Geoffroy.*

The appearances of the more common sorts of this snake being easily to be imagined, I have not thought it necessary to figure them ; but those of the varieties, being more intermixed and complicated, I have represented the three principal ones, believing that all others which occur in South Africa, will be but modifications of one or other of them. Of the varieties figured, the one of Plate XVIII. is the most common, next to it that of Plate XIX., and the one most rarely met is shown in Plate XX. The latter is known throughout the Cape colony by the name of *Spuugh-slang* (spitting snake), and is so called from the power it is supposed to possess of ejecting its poison to a distance. All the *Cobra de copellos* of Southern Africa distil poison from the points of their fangs when they are much irritated, and are able to eject a portion of it beyond the mouth by a forcible expiration ; but that any greater power than that is possessed by the *Spuugh-slang*, I am not disposed to believe ; nevertheless the contrary is strongly maintained both by the European and native inhabitants. Both of these affirm that the snake in question is able to cast its poison to a distance of several feet, especially if the wind be blowing so as to favour its object ; and that it often projects it into the eyes of unwelcome intruders, and thereby occasions a degree of inflammation, which not uncommonly terminates in loss of sight.

In the Cape Colony the varieties of the *Cobra de Capello* are all regarded as highly dangerous ; and many severe, if not fatal consequences, are the results of their bite. They are all savage and bold, and when assailed, they generally resist rather than fly, and they not unfrequently even act on the offensive. They climb trees with great facility, and often take to the water out of choice. In the liquid element their progress is rather slow, and during their residence in it the head and a portion of the neck is always kept raised a little above the surface. Whenever they are excited or irritated they, like the common species of India, inflate the loose skin of the neck, and extend it laterally, so as to exhibit an appearance as if the neck was edged on each side with a thin semi-circular appendage. They feed upon small quadrupeds, birds, and eggs, and in search of the latter, they ascend trees to rob nests.

* Descrip. de l'Egypte Atlas, Rept. plate 7. fig. 3.



THE BROWN BOA
Python brongersmai

LYCODON GEOMETRICUS.—SCHLEGEL.

REPTILIA.—PLATE XXII. ADULT AND YOUNG.

L. suprà subcastaneus ; infrà pallide flavus, latere duabus lineis longitudinalibus anticè notato ; capite suprà lineâ flavâ marginatâ, et lineâ coloris similis inter oculum et oris angulum ; capite depresso ; corpore subcylindraceo ; squamis anticè hexagonis elongatis, posticè brevibus subhexagonis.

LONGITUDO a naso ad anum 26 unc. ; caudæ 6 unc. 6 lin.

LYCODON GEOMETRICUS, Physionomie des Serpens, par Schlegel, page 111.

COLOUR.—Back and upper portion of sides intermediate between yellowish brown and umber-brown, the colour of the sides being separated from that of the back by a narrow cream-yellow band, which commences near the hind head and is lost before it reaches the tail. Below the brown of the side, which exhibits the appearance of a longitudinal stripe, there is a second cream-coloured band about the width of the first, but neither so distinctly defined nor so lengthened, rarely reaching to the middle of the body. Behind, where this second line does not exist, the lower edge of the brown gradually fades into a light-brownish purple-red. Lower portion of sides and under parts straw-yellow. Besides the yellow bands already mentioned there is one of a brighter tint edging the lateral and anterior parts of the upper surface of the head, and another extending between the outer corner of the eye and the angle of the mouth ; there are also some more or less vertical lines of the same colour on the upper lip.

YOUNG.

The ground colour sienna-yellow glossed with purplish red, and the back and the sides towards the head are freely variegated with several rows of spots of a brownish red colour. Line edging the upper surface of the head, and one between the eye and the angle of the mouth bright yellow, the former is connected with its fellow of the opposite side by a narrow transverse yellow line ; upper and under lips pale yellow vertically barred with brown. Under parts pale straw-yellow.

LYCODON GEOMETRICUS.

FORM, &c.—Head depressed, subtriangular. Body subcylindrical, and tapered from the middle toward each extremity ; the decrease in thickness towards the head is but trifling, while in the opposite direction it is very considerable. The head is slightly broader than the body, and the neck is more flattened than the portions behind it. The tail is pointed, its under surface flat, and its upper semi-cylindrical. The scales towards the head are long, narrow, and six-sided ; about the middle they are much broader and shorter, but still somewhat six-sided, which is also the figure of those of the tail and body near to it. The anterior teeth of the maxillary row and also those of the lower jaw considerably longer than the hinder ones. Greatest thickness of the largest specimen I have seen about that of a man's thumb. Abdominal plates, 208. Subcaudal scales, 71 in each row.

DIMENSIONS.

	In.	Lines.
Length from the front of the nose to the anus	26	0
of the tail	6	6
Circumference at thickest part	2	8

This snake, which is rarely seen in South Africa, resorts to dry and arid situations ; its movements are moderately quick, and its food, at least a part of it, consists of lizards.

L Y C O D O N G U T T A T U S
(Reptilia. Plate 23)



LYCODON GUTTATUS.—SMITH.

REPTILIA.—PLATE XXIII.

L. suprà obscurè flavo-brunneus carneo-tinctus, dorso lateribusque effuse guttis brunneis variegatis; infrà ochraceus; capite suprà lineis brunneis variegato, duabus transversis, reliquis longitudinalibus; maculis duabus oblongis pone nucham; squamis subquadrangularibus in lineis obliquis ordinatis.
LONGITUDO e naso ad anum 13 unc.; caudæ 3 unc. 6 lin.

COLOUR.—Above dull yellowish brown with a pink gloss, the upper parts profusely variegated with several rows of dark spots, the two rows of spots along the centre of the back almost circular and largest, the spots of the other rows smaller and irregular in shape; each of the spots, particularly of those of the two middle rows, consist of two colours, viz. an external ring of an umber-brown hue, and a centre of light reddish brown. Top of the head pale yellowish brown, variously variegated,—across the hindhead there extends a narrow reddish brown line, and another of the same tint is observed between the eyes, the latter has its extremities directed backwards and extended upon the hindhead; between these lines two or three longitudinal lines of small dots, and in front of the one which runs between the eyes there are two narrow longitudinal brown lines extending to the tip of the nose. The extremity of the transverse line, which crosses the hindhead, is joined to another line of the same colour which proceeds from the outer edge of the eye, and from the point of union a single line is prolonged for a short distance along the side of the neck. Between the hindhead and the commencement of the circular spots of the back there are two narrow oblong blotches, the colours the same and similarly arranged as those of the spots of the back. The colour of the under parts pale ochrey yellow. Eyes dark brown.

FORM, &c.—Figure lengthened and slender; the greatest thickness of body about midway between the nose and the anus, from thence it tapers considerably towards both extremities. Head slightly depressed; the sides of hindhead slightly bulging, giving to the latter a superiority of width over the

LYCODON GUTTATUS.

commencement of the neck. Tail slender, and tapered to a sharp point. The front teeth of the maxillary row and of the lower jaw rather longer than the rest. Scales small, somewhat diamond-shaped, and disposed in oblique rows between the centre of the back and the abdominal plates; on and approaching the tail, they are much broader than they are towards the head, and not so regularly shaped. Behind the eye two scales, in front one, and anterior to the latter a very small frenal. Abdominal plates, 196. Subcaudal scales, 72 in each row.

DIMENSIONS.

	Inches.	Lines.
Length from the point of the nose to the anus	13	0
Length of the tail	3	6
Circumference at the thickest point	1	6

This snake, so far as I know, has not been found within the limits of the colony of the Cape of Good Hope, and the only specimens I acquired were obtained during the movements of the expedition party beyond Kurrichane, and were all found in rudely constructed stone-walls. It was of a mild disposition, and scarcely attempted to escape when the fabric was demolished in which it was concealed.

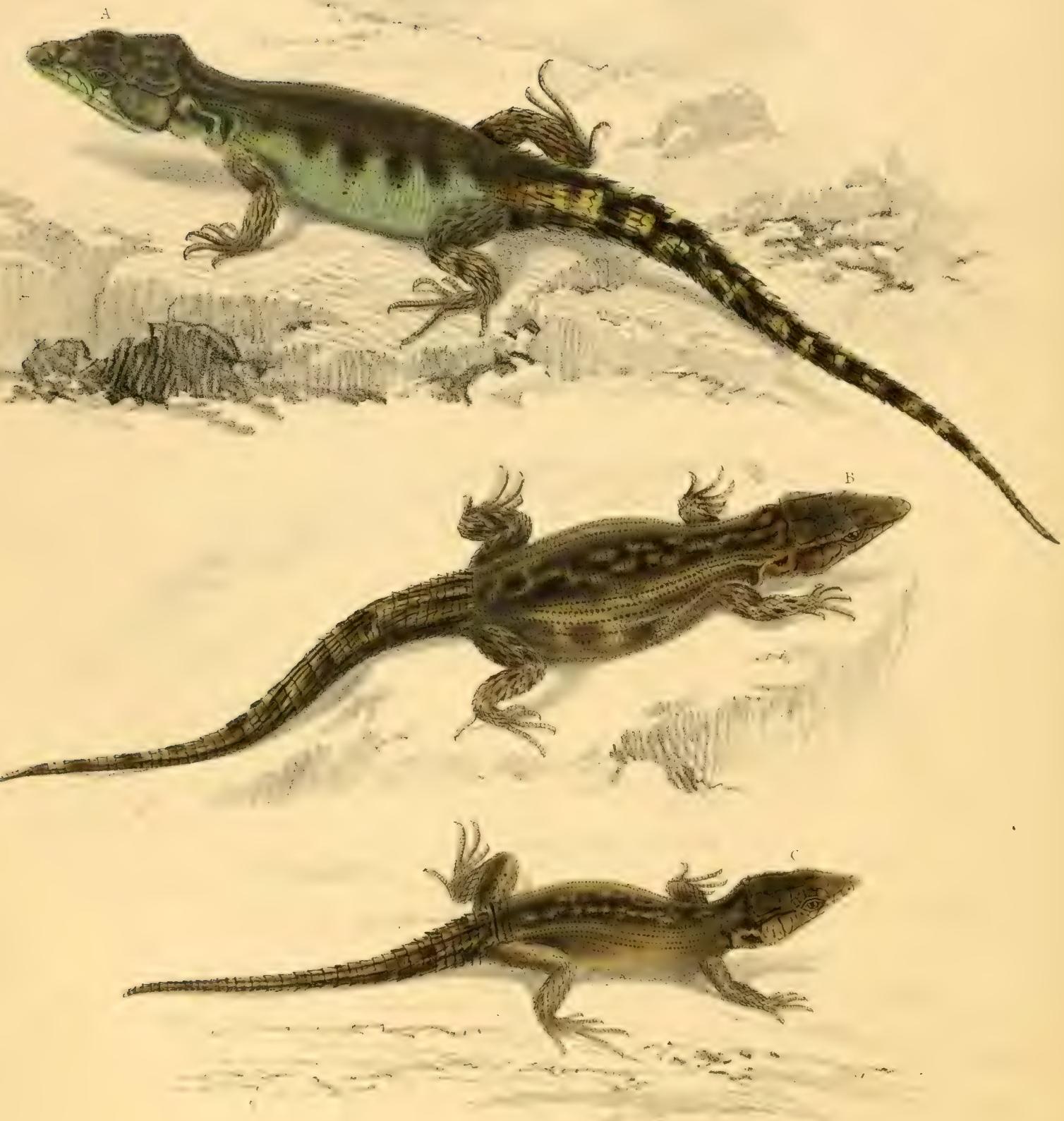
I CORDYLOPSIS MICROLEPIDOTUS,
a CORDYLOPSIS MICROLEPIDOTUS

(Reptilia Plate 24)



Tropidophorus MICROLEPIDOTUS. A Male, B Female.
Reptile. Late 18th





CORDYLUS MICROLEPIDOTUS. A Male. B. Female. C. Young

CORDYLUS MICROLEPIDOTUS.

REPTILIA.—PLATES XXIV. XXV. AND XXVI.

C. dorso maculis flavis in ordinibus transversis ornato; caudā superne flavo-variegatā; cervice, dorso, lateribusque squamis parvis plus minusve carinatis et in seriebus transversis, ordinatis; caudā superne squamis carinatis spinosis armatā; poris femoralibus verrucosis in ordinibus duabus aut tribus dispositis.

CORDULUS MICROLEPIDOTUS, Cuv. Reg. Animal. 2d Edit. vol. ii. f. 33.

CORDYLYS MONTANUS,—*MELANOTUS*,—*ALGOENSIS*,— et *SUBVIRIDIS*, Smith, Mag. Nat. Hist. vol. ii. page 32.

(VAR. Fig. A. Plate XXIV.)

COLOUR.—The upper and lateral parts of the head clear brownish red, the former marked with a longitudinal narrow line of a pale reddish orange colour over each eye; the sides of the head in front of the eyes and the lips pale brownish yellow. The upper surface of the back and the tail livid brownish red, the former variegated with short transverse stripes or spots of an ochre-yellow colour, so disposed as to form several broken bands;—between the hinder legs and on the neck immediately behind the head the bands are sometimes continuous; the sides of the upper surface of the tail are sparingly mottled with short, narrow, yellow streaks, and a band of the same colour is often observed extending from the side of the neck and arching over the base of each fore-leg. The sides of the body intermediate between gall-stone and ochre-yellow, and vertically barred by several triangular prolongations of the dark colour of the back, which in some specimens reach to the margin of the abdomen; the sides and under-surface of the tail gamboge-yellow,—the former marked with many narrow vertical liver-brown bars. Belly and under surface of extremities intermediate between gamboge and sienna-yellow; upper surface of extremities pale gamboge-yellow irregularly barred with reddish-brown. The sides of the neck with two distinct and more or less vertical spots of a darker colour than the back, and the space between the *rami* of the lower jaw is a livid blue. Eyes chesnut brown.

(VAR.—Fig. B. Plate XXIV.)

COLOUR.—The upper surface of the head and the temples chesnut-brown; the back orange-coloured brown variegated with transverse bars of quadran-

CORDYLUS MICROLEPIDOTUS.

gular light yellow spots, those near the centre of the back smallest; sides superiorly the same colour as the back, inferiorly deep reddish orange and partially barred by prolongations of the dark colour of the higher parts of the sides; the sides of neck marked with three distinct dark liver-brown spots, one directly behind the *meatus externus*. The space between *rami* of lower jaw livid blue; the belly and under surface of extremities sienna-yellow clouded with deep reddish-orange; under-surface of tail dull reddish-orange; upper surface of extremities light orange-brown. Eyes chesnut-brown.

(VAR. Plate XXV.)

COLOUR.—(*Male*. Fig. A.)—The upper surface of the head light brownish-orange shaded with umber-brown, the back dull yellowish brown finely variegated with many longitudinal rows of small liver-brown spots; the sides of the body intermediate between orpiment-orange and tile-red, and variegated here and there with short liver-brown streaks; the sides of the head before the eyes the same colour as the upper surface of the head; sides of lower jaw pale reddish orange shaded with umber-brown; temples deep reddish orange, and the sides of the neck with two or more deep liver-brown blotches. Tail dull yellowish brown irregularly mottled with umber-brown; space between *rami* of lower jaw livid blue; belly and under-surface of tail ochrey yellow tinted with green; legs and toes pale reddish orange, the fore legs spotted sparingly with light-brown, the hinder ones spotted or barred with umber-brown. Eyes deep reddish brown.

Female, (fig. B.)—The upper surface of head and the temples a yellowish hair-brown with the edges and centre of the scales lightest; back liver-brown freely variegated with short longitudinal stripes of a colour intermediate between oil-green and ochre-yellow; the sides of the lips and the body the same colour as the spots of the back, and the sides of the latter is variegated with several rows of dark umber-brown dots and some light umber-brown blotches. The extremities externally coloured like the sides and freely mottled with umber-brown spots most numerous towards the toes. Tail liver-brown mottled with dull yellowish green; space between *rami* of lower jaw livid blue; belly and under surface of tail ochrey yellow with a greenish tinge. Eyes dull reddish brown.

(VAR.—Plate XXVI.)

COLOUR.—(*Male*. Fig. A.)—The middle and hinder parts of the head superiorly, and the back a yellowish hair-brown, freckled with liver-brown,

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the centre of each scale being of the latter colour ; the upper surface of the head anteriorly oil-green. The sides of the lips and body a light yellowish emerald-green, and the latter is partially barred with a number of narrow prolongations of the dark colour of the back ; the sides of the neck with two dark liver-brown spots, the anterior one waved, the hinder one vertical. Tail pale liver-brown, irregularly spotted with sulphur-yellow ; belly livid greenish yellow ; legs and toes oil-green barred with liver-brown. Eyes deep reddish brown.

Female and young.—(Figs. B. and C.)—The upper surface of head and back pale umber-brown, the sides of the former finely edged with pale oil-green, and the discs of plates finely dotted with the same colour ; the back variegated with a number of small irregular pale oil-green spots. Sides intermediate between oil-green and ochre yellow, and marked with several longitudinal lines of small liver-brown spots ; sides of head yellowish hair-brown. Tail oil-green mottled with somewhat square umber-brown spots ; extremities the same colour as the sides and speckled with umber-brown spots. Belly straw yellow with a greenish tinge. Eyes deep reddish brown.

FORM, &c.—Head rather depressed and subtriangular, its upper surface posteriorly level, and anteriorly sloped towards the nose ; its sides in front of the eyes nearly perpendicular, behind them convex and bulged, particularly posterior to the angles of the mouth ; the hinder edge of the temples armed with two or three compressed tubercular looking scales, which project outwards and backward, and conceal more or less the external openings of the ears. The forms of the plates and scales of the head vary a little in the different varieties, and even in individuals of the same variety, as will be seen on referring to Plate XXX.* The plates of the temples differ considerably in size and configuration, being in some like scales, in others like lengthened plates, and such variations are even exhibited by specimens of the same variety. The neck and body like the head is somewhat depressed, and the latter bulges considerably on each side. The skin of the neck, particularly the portions which cover its side is loose, and more or less folded or deeply wrinkled, and between these wrinkles are situated the very

* Fig. 1, the upper surface of the head of specimen, figured Plate XXIV. 1 ;—1 a, the side of the head of ditto. Fig. 2, the upper surface of the head of specimen figured Plate XXIV. 2 ;—2 a, the side of the head of ditto ;—2 b, femoral pores of ditto. Fig. 3, the upper surface of the head of specimen figured Plate XXV. A ;—3 a, the side of head of ditto ;—3 b, the femoral pores of ditto. Fig. 4, the upper surface of the head of specimen figured Plate XXVI. A ;—4 a, the side of head of ditto ;—4 b, the femoral pores of ditto.

CORDYLUS MICROLEPIDOTUS.

dark blotches described in treating of the colouring of this lizard ; other folds, though not so distinctly marked, are observed to traverse the upper surface of the neck, and, like those of the sides, evidently result from the skin on these situations being more extensive than the parts it is destined to cover, in order to permit the head to move freely. The skin of the back of the neck, and of the back and sides of the body, is covered with two descriptions of scales, the one description considerably larger than the other, more or less orbicular, and disposed in rows, which can be traced either longitudinally or transversely, and each of these scales is more or less carinated, particularly towards its posterior edge, the *carinæ*, however, are less acute in adult specimens than in young ones, and less on the sides than the back, probably from the effects of friction. The second description of scales occur in the interstices between the ones just described, and are very small, somewhat circular, and without keels, and the sides of the neck are entirely coated with scales of this description. The superior and hinder surfaces of the leg are covered with somewhat diamond-shaped scales, all of which are strongly keeled, and the keel of each posteriorly forms a sharp elevated spine ; the scales coating the under and anterior surfaces of the fore-legs smaller than those on their upper part, and with less distinct keels. Those of the anterior and inferior surfaces of the hinder leg, large, flat, somewhat quadrangular, and without keels. Feet rather slender, and covered with keeled scales. Toes long, delicate, and free. Claws short, curved, pointed, and laterally compressed. Chin and anterior part of throat covered with small, somewhat quadrangular scales ; posterior part of throat and space between fore-leg coated with large, imbricate, irregular scales, not in distinct rows ; rest of under part of body with ten rows of four-sided plates, the greatest length of each plate transversely. Tail rigid, and very hard, thick at the base, from whence it tapers to a fine point ; above it is flat and rather broad, below narrow and slightly rounded, hence its section exhibits somewhat of a triangular form, two angles being formed by the edges of the upper surface, and the third by the under surface. The scales on this part of the reptile are disposed in rings, towards the base each ring consists of two circles of scales, and towards the apex only of one ; all the scales of the upper and lateral parts are carinated, and the *carinæ* are most developed in those situated over the lateral angles, particularly towards the base of the tail, where they terminate posteriorly in prominent sharp spines. On the lower parts of the sides, and on the centre of the upper surface, the keels are much less marked, and are not prolonged into acute spines ;

CORDYLUS MICROLEPIDOTUS.

towards the point of the tail the keels are acute, but do not end in spines. Where the rings consist of two circles of scales, the scales of the circle nearest to the body are always smallest, and the keels but scarcely visible. The under-surface of the tail, towards its base, coated with two rows of flat square scales, towards the point with keeled ones, like those of the sides and upper surface. *Meatus externus* large, vertically ovate, and opening outwards and backwards, under the projecting edge of the temple. Nostrils small, circular, and placed near to the apex of the muzzle. Eyes moderately large, rather deeply set, and the eyelids, particularly the lower ones, covered with small granular scales. Femoral pores in one, two, or three rows, each of a circular shape, and its interior consisting of a sort of fungoid texture, which generally protrudes beyond the investing membrane. Full-grown specimens of this species vary from twelve to eighteen inches in length, and the tail generally measures more than the other parts.

Each of the varieties figured appears to be restricted to its own localities; and, as far as my observations extend, no specimens of two varieties are ever found in the same districts. All the varieties inhabit rocky situations, and where they have a choice they invariably prefer precipices, and the stoney walls of difficultly accessible ravines. In these situations they wander carelessly in search of food and warmth, unless alarmed by what they may regard as enemies. On being closely approached in their retreats they seek concealment under rocks, or in crevices; and when they get into such positions they are with difficulty captured, as by aid of the prominences on the hinder edge of each temple they hold on with a tenacity which is quite surprising, and by them they occasionally offer such an effectual resistance to the force applied from behind, that the tail breaks off from the body before the reptile is secured. The variety represented in Plate XXIV., Fig 1, is found on Table Mountain, and the hills near Cape Town; that on the same plate, and lettered 2, is an inhabitant of rocky precipices at and around Algoa Bay. The variety represented in Plate XXV. occurs on the hills between the principal branches of the Orange River, to the eastward of Phillopolis; and that figured in Plate XXVI. is found on the top of the high mountainous range, which extends behind Kaffaland and the country of Natal.



CORDYLUS FASCIATUS.—SMITH.

REPTILIA. PLATE XXVII. FIG. 1.

C. superne nigro-brunneus, dorso maculis flavis fere confluentis in ordinibus transversis variegato ; caudâ superne flavo-maculatâ ; gulâ livido-cæruleâ ; gutture ventreque viridi-flavis ; caudâ inferne sub-flavâ ; capitis lateribus postice squamis tribus tuberculosis armatis, super aurem externam porrectis.
LONGITUDO e naso ad basin caudæ 4 unc. 4 lin.; caudæ 5 unc. 2 lin.

CORDYLUS (PSEUDOCORDYLUS) FASCIATUS, Smith, Mag. of Natural History, vol. ii. p. 32.
CORDYLUS MICROLEPIDOTUS, Dum. et Bib., Erpet. Général, tom. v. p. 361.

COLOUR, &c.—The upper and lateral parts of the head, the back, the sides and the upper and lateral parts of the tail liver-brown, with ochreous or cream-yellow variegations, the liver-brown lightest on the head. The yellow variegations of the upper surface of the head consist of narrow, irregular, broken stripes, principally on the sides towards the nose ; on the neck and back they are in the form of quadrangular spots, disposed in transverse rows, varying in each from eight to ten in number; on the sides the yellow occurs as a waved longitudinal line, and on the tail it is in large, irregular-shaped, spots arranged in two rows, one row along each upper angle.

FORM, &c.—Head rather large, neck narrower than the hind head, body rather bulky and subcylindrical ; the tail depressed at the base, and cylindrical near the point. The upper surface of the head flat and faintly rugose, the shape of the plates represented in Plate XXX., Fig. 5. The sides of the head before the angles of the mouth nearly perpendicular, and the temples convex and bulging ; the posterior edge of each armed with three tubercular and somewhat pointed scales (Plate XXX. fig. 5a), which project outwards and backwards over the external ear ; the other scales on the temples of two descriptions, those towards the centre large, flat, and irregular, in form ; those around the edges small, granular, and somewhat keeled. Scales of the upper lip six in number, not reckoning the rostral one ; the hindermost somewhat keeled, those of the

CORDYLUS FASCIATUS.

lower lip also six, the last two strongly keeled. The scales on the back and sides of the neck, and those along the middle of the back small and granular; those on the sides of the back and on the sides of the body considerably larger, and each with a small horny tubercle near its centre, which also exists on each of those of the neck and middle of the back;—all the scales are disposed in transverse rows, the rows on the neck less distinct than those on the body. Scales covering the fore-legs, except beneath towards the body, and those on the upper surface of hinder legs somewhat diamond-shaped, each carinated, and the carina elongated posteriorly and forms an acute raised spine; under surface of hinder legs coated with smooth, moderately-large, somewhat quadrangular scales, and the hinder surface with granular ones. Tail covered with hard rugged scales, disposed in distinct rings, and each ring composed of two rows of scales; the scales of the first, or basal row, smallest, and but slightly carinated, those of the other strongly carinated, and on the upper angles and sides of the tail particularly, the keels are very prominent posteriorly, and form strong sharp spines. Scales between *rami* of lower jaw small, flat, quadrangular, and disposed in longitudinal rows; on the under surface of the neck subovate, imbricate, and arranged in oblique rows. The plates covering the under surface of body are placed in transverse rows, fourteen in each. Pre-anal space covered with flat irregular-shaped scales, the hindermost ones the largest; the base of the tail on each side close to anus, armed with a pointed tubercular scale projecting outwards, and differing in character from those which follow it. Feet moderately large; toes long and slender, and each armed with a short pointed and curved nail; scales covering under surface of feet small and tubercular. Femoral pores in two or more rows rather irregularly placed, and their sheathes elevated and warty (Plate XXX. fig. 5 b). The largest specimen which I have seen—the one described—measured nine inches and a half in length.

Doubts may be entertained of the propriety of regarding this as distinct from *Cordylus Microlepidotus*; yet, when the scales of the neck and centre of the back are examined, and contrasted with those on the same parts of the species just named, sufficient differences are observable to justify my regarding them at present as probably distinct. Dumeril and Bibron regard them as identical,* and it is just possible they may have had an opportunity of examining a greater number of specimens than I have had, and hence have arrived at a just conclusion.

Two of the three specimens I have examined were obtained on the rocky hills in the neighbourhood of Graham's Town; and the third, which is in the Museum at Fort Pitt, was, I believe, obtained from the same locality. Having never seen a specimen alive, I know nothing of its habits.

* Erpetologie Général, tom. v. p. 363.

CORDYLUS (HEMICORDYLUS) CAPENSIS.—SMITH.

REPTILIA. PLATE XXVII. FIG. 2.

C. capite, dorso, lateribus, extremitatibus caudâque supernè profunde purpureo-brunneis ; gutture, pectore, ventre caudâque inferne brunneo-rubris ; pedibus inferne-pallidiflavo-brunneis ; squamis dorsi magnis quadrangularibus et carinatis, laterum parvis granulosis.

LONGITUDO e naso ad basin caudæ 4 unc. ; caudæ 5 unc. 9 lin.

HEMICORDYLUS CAPENSIS, Smith, Magazine of Natural History, vol. 2. p. 32.

ZONURUS CAPENSIS, Dum. et Bib. Erpet. Général, tom. v. p. 360.

COLOUR.—The head, back, sides, extremities, and upper and lateral parts of tail purplish brown ; throat, breast, belly, and under surface of tail dull brownish red ; under surface of feet pale yellowish brown.

FORM, &c.—Head subtriangular, the anterior half tapered to the nose, which is slightly rounded or obtuse, its upper surface slightly convex, its sides anteriorly perpendicular, posteriorly convex and bulged. Neck considerably narrower than the hind-head with the skin covering it loose, and forming a large longitudinal fold on each side, extending from the angle of the jaws nearly to the fore-leg. Body subovate and depressed. Tail thick at the base and depressed, towards the point cylindrical and tapering. The plates covering the upper surface of the head smooth, and with well-defined edges, the form of each represented in Plate XXX. Fig. 6.; labial scales of upper jaw eight, of lower jaw six, exclusive of the rostral and mental plates; angles of mouth margined with minute almost granular scales. Scales of the temples rather large and in vertical rows, two or three in each row, and the lower one of the hindermost row is formed differently to the rest, being somewhat tubercular, and projected outwards and backwards over the external ear, (vide Plate XXX. fig. 6 a.) Scales of the back large, quadrangular, strongly carinated and disposed in transverse rows, generally ten in each row, the keels forming continuous delicate ridges ; the lateral and

CORDYLUS (HEMICORDYLUS) CAPENSIS.

upper parts of the neck, and the lower portions of sides covered with small, somewhat circular, prominent scales like small granulations, constituting a strong diagnostic character. The upper and anterior surfaces of the extremities coated with large somewhat diamond-shaped scales, each scale strongly carinated, the anterior and under surfaces of the fore-legs towards the body with small granular scales, and towards the toes with large and smooth ones ; the under surface of the hinder legs covered with large smooth scales, excepting in front of the femoral pores, where they are small and somewhat circular, hinder surface coated with minute granular scales. Tail surrounded by circles of hard rugged quadrangular scales, each scale strongly keeled and each keel, especially towards the base of the tail, elongated posteriorly into a sharp prominent spine, most developed superiorly at the lateral angles ; the keels of the scales on under surface of tail obtuse, only slightly indicated and without the elongations which on the upper and lateral parts form spines. Space between rami of lower jaws covered with scales of two kinds ; those on the central portion quadrangular, rather large, and disposed in irregular rows, those at the sides, and which edge the lower jaw, small, and granular. Scales of the under surface of the neck moderately large, ovate, and irregularly placed ; the plates on the under parts of the body arranged in regular transverse rows, eight in each. Pre-anal space covered partly with small and partly with large scales or plates ; the large ones, which are two in number, lie immediately over the anus, and are four-sided. Femoral pores small, prominent, circular, closely set, eighteen in number on each side, and arranged in a single row, (Plate XXX. fig. 6 b.) Feet moderately large ; toes long, slender, and armed with short curved and pointed claws ; the scales of the under surface of the feet rather prominent, or subgranular. Nostrils small, circular, and opening laterally in the centre of the naso-rostral plates. The specimen described, the only one I have seen, measured nine inches and three quarters.

This species is rarely met with in South Africa, and the only specimen I saw in that country, and which is now in the museum of the Army Medical Department, at Fort Pitt, Chatham, was captured on the Hottentot Holland Mountain, near Cape Town, and preserved by Mr. Ford, surgeon of the 49th Regiment.



SCELOPORUS TIGRIS
SCHNEIDERI
C. W. HORN
(Reinhard, Tab. 3)

CORDYLUS POLYZONUS.—SMITH.

REPTILIA. PLATE XXVIII. FIG. 1.

C. superne flavo-brunneus, dorso maculis brunneis in ordinibus duobus longitudinalibus variegato ; maculis duabus nigro-brunneis pone aurem ; squamarum seriebus quadraginta inter nucham et basin caudæ.

LONGITUDO e naso ad basin caudæ 4 unc. ; caudæ 5 unc.

CORDYLUS POLYZONUS, Smith, Mag. of Natural History, Vol. ii. p. 31.

ZONURUS POLYZONUS, Dum. et Bib., Erpet. Général, tom. v. p. 357.

COLOUR.—The upper surface of the head, the back, the sides, and the extremities intermediate between yellowish and chesnut-brown, the back variegated with irregularly shaped umber-brown spots, the majority of them arranged in two longitudinal rows ; behind the ear on each side of the neck two very deep liver-brown blotches. Tail dull yellowish brown, mottled sparingly with small irregular umber-brown spots. Toes light greenish brown. Belly and under surface of tail a rusty ochreous yellow ; sides of head wood-brown, shaded with yellowish and light umber-brown. Eyes deep reddish brown.

Var.—Above a uniform livid liver-brown without distinct variegations ; beneath light yellowish brown or livid yellowish brown.

FORM, &c.—Head rather small, the temples convex and laterally very prominent ; the neck rather narrower than the hind head, and convex superiorly ; the body depressed and subovate ; tail at the base, flat above, rounded below and towards the point cylindrical ; the hinder extremities rather long. The upper surface of the head irregular, the parietal shield rather concave ; the palpebral plates project considerably, and form arched eyebrows ; naso-rostral plates subhemispherical, and the nostril situated near their outer margin, so as to open laterally ; the form of the other plates, as represented in Plate XXX. fig. 7. Labial scales of upper jaw seven, the last two rather tubercular, those of the lower six, the last two horizontally compressed, and projecting later-

CORDYLUS POLYZONUS.

ally like two keels; the scales of the temples hard, rugged, indistinctly keeled, and one over each external ear, somewhat triangular and prominent, so as to form a strong spine, extending outwards and backwards. Vide Plate XXX. fig. 7 a. Scales of the neck superiorly, and those of the back and sides rather large, quadrangular, and arranged in distinct transverse rows, about forty in number, each scale with an obtuse and slightly developed keel; scales of the sides of the neck somewhat triangular, rather tubercular, and each with a prolonged apex directed outwards and backwards. The fore-legs and the upper and posterior surfaces of the hinder legs somewhat diamond-shaped and strongly keeled, each keel behind terminating in an acute point; the scales of the under and anterior surfaces of the hinder leg somewhat hemispherical and smooth. Tail covered with rugged keeled scales disposed in rings, the keels of the upper and lateral scales most developed, and each posteriorly is prolonged and forms a spiny point, the latter most lengthened on those of the sides near to the body; towards the tip of the tail the keels are distinct, but the spiny prolongations are hardly visible. Space between *rami* of lower jaw covered with small quadrangular scales arranged in longitudinal rows; scales of under surface of neck subovate and disposed in oblique rows, those of under parts of body rather small, quadrangular, and in transverse rows, eighteen in each. Pre-anal space covered with small flat irregular scales, one on each side of the central scale of hindmost row larger than the others and five-sided; immediately behind anus a transverse band of small scales not so distinctly marked as in *Cordylus griseus*, and at each of the anterior angles of this band there are two larger scales, one the innermost flat, the other tubercular and pointed. Feet moderately large; toes rather strong and armed with short, pointed, and curved nails; under surfaces of feet and toes covered with rugged tubercular scales. Femoral pores very small—(see Plate XXX. fig. 7 b)—about eighteen in number, and disposed in a single row, none projecting beyond the circumjacent scales, which affords a character by which this species is readily to be distinguished from *Cordylus griseus*. Adult specimens usually measure from nine to ten inches.

This species is rarely found within the boundaries of the Cape Colony, but specimens are readily procured to the north of the Orange River. In the districts it inhabits, it in some measure takes the place of *Cordylus griseus*, for though the latter is found in them also, it never occurs so abundantly as more to the southward. Like the last-named species it chiefly inhabits rocky hills, but it is also often found under solitary rocks or large stones.

The number of the transverse rows of scales on the back, the small size of the femoral pores, and the greater size of this reptile, are leading characters by which it is to be distinguished from the only other species with which it can be confounded.

CORDYLUS GRISEUS.—Cuv.

REPTILIA. PLATE XXVIII. FIGS. 2 and 3.

E. superne flavo-brunneus, subtus viride flavus; dorso lateribusque maculis striisve brunneis variegatis; extremitatibus maculis brunneis variis; squamarum ordinibus viginti-septem inter nucham et basin caudæ.

LONGITUDINE naso ad basin caudæ 2 unc. 8 lin.; caudæ 3 unc. 4 lin.

CORDYLUS GRISEUS, niger, et dorsalis, Cuv., Regne Animal, 2d ed. tom. ii. p. 33.

ZONURUS GRISEUS, Dum. et Bib., Erpet. Général, tom. v. fol. 351.

COLOUR.—The upper and lateral parts of the head, body, and tail yellowish brown deadened with brownish orange, the back and sides variegated with a number of irregular umber-brown blotches or short bars; tail slightly clouded or shaded with umber-brown stripes, and the extremities, particularly the hinder ones, variegated sparingly with umber-brown spots; under parts greenish yellow. Eyes reddish brown.

Var. Fig. 3.—The upper and lateral parts of the head, body, and tail, also the extremities bright purplish brown; the under parts pale buff orange.*

FORM, &c.—Head rather small and subtriangular, the temples convex but less prominent than in the other species; neck as broad as the hind head; body subovate and superiorly slightly convex; tail depressed at the base cylindrical towards the point, the latter acute; legs moderately long and slender. The upper surface of the head flat and slightly granular, the palpebral on the same plane with the other plates, the form of the plates represented in Plate XXX, fig. 8; the sides of the head anterior to the eyes nearly perpendicular, the upper lip rather protuberant, the sides behind the eye (the temples) slightly convex, and covered with irregular-shaped, rugose, and

* Besides this variety several others might be described, but as each is so easily to be recognized as approaching one of the two kinds noticed, it is not considered necessary to instance the many individual differences which occur in this species.

CORDYLYS GRISEUS.

almost keeled scales ; the two lying over the external ear tubercular, compressed (see Plate XXX, fig. 8 a,) and prominent. The scales of the upper surface of neck, back, and sides disposed in transverse rows, about twenty-seven in number, each scale quadrangular in shape, and slightly keeled, the keel posteriorly slightly prolonged beyond the edge of the scale ; scales of the sides of the neck triangular, spinous, and pointed ; scales of the tail arranged in circular rings and each scale strongly carinated, the *carina* on the upper and lateral surfaces elongated posteriorly so as to form prominent spiny points. The fore legs and the upper surface of the hinder ones covered with triangular carinated scales, each of which terminates in a projecting point ; the lower surface of hinder legs coated with quadrangular smooth scales, and the hinder surface with small granular ones. Scales between *rami* of lower jaw subquadrangular, smooth, and arranged in transverse rows, those of under surface of neck subovate, and arranged in slightly arched rows. Plates of under surface of body in distinct transverse rows, twelve in each, the middle ones larger than the lateral ones. Pre-anal space covered with subquadrangular scales, the two centre ones of the hindermost row largest ; immediately behind anus a band of small somewhat triangular scales, with two larger ones at each anterior angle, the inner one flat, the outer one tubercular, pointed, and projecting outwards. Feet small ; toes long, slender, and armed with short, pointed, and curved nails. Femoral pores (Plate XXX. fig. 8 b.) eight, arranged in one line, and each situated in a prominent warty elevation. Full grown specimens of this species usually measure from six to seven inches.

This species is very widely distributed over Southern Africa, and there is scarcely a stony knoll, a precipice, or an exposed rock which does not afford a habitat for one, two, or more individuals. In common with others of the genus, it seeks concealment under stones and rocks, or in the chinks between them, and when once lodged in such positions it is not easily captured. The colours of no two individuals are quite the same, therefore naturalists, who do not rest their specific characters upon other details, will of necessity be forced to recognize mere varieties as distinct species.

COOTYULUS CAVATICUS TELL

(Plate 23)



CORDYLUS CATAPHRACTUS.—GRAY.

REPTILIA.—PLATE XXIX.

C. superne pallide flavo-brunneus, dorsi medio leviter viridi-tincto; partibus inferioribus brunno-rubris flavo nebulatis; gulâ guttureque profunde brunneis flavo maculatis; extremitatibus caudâque flavo-brunneis.

LONGITUDO e naso ad basin caudæ 5 unc. ; caudæ 7 unc.

CORDYLUS CATAPHRACTUS, Gray.

CORDYLUS MACULOSUS, Smith, Magazine of Natural History, vol. ii. p. 31.

ZONURUS CATAPHRACTUS, Dum. and Bib. Erpetol. Général, vol. v. fol. 355.

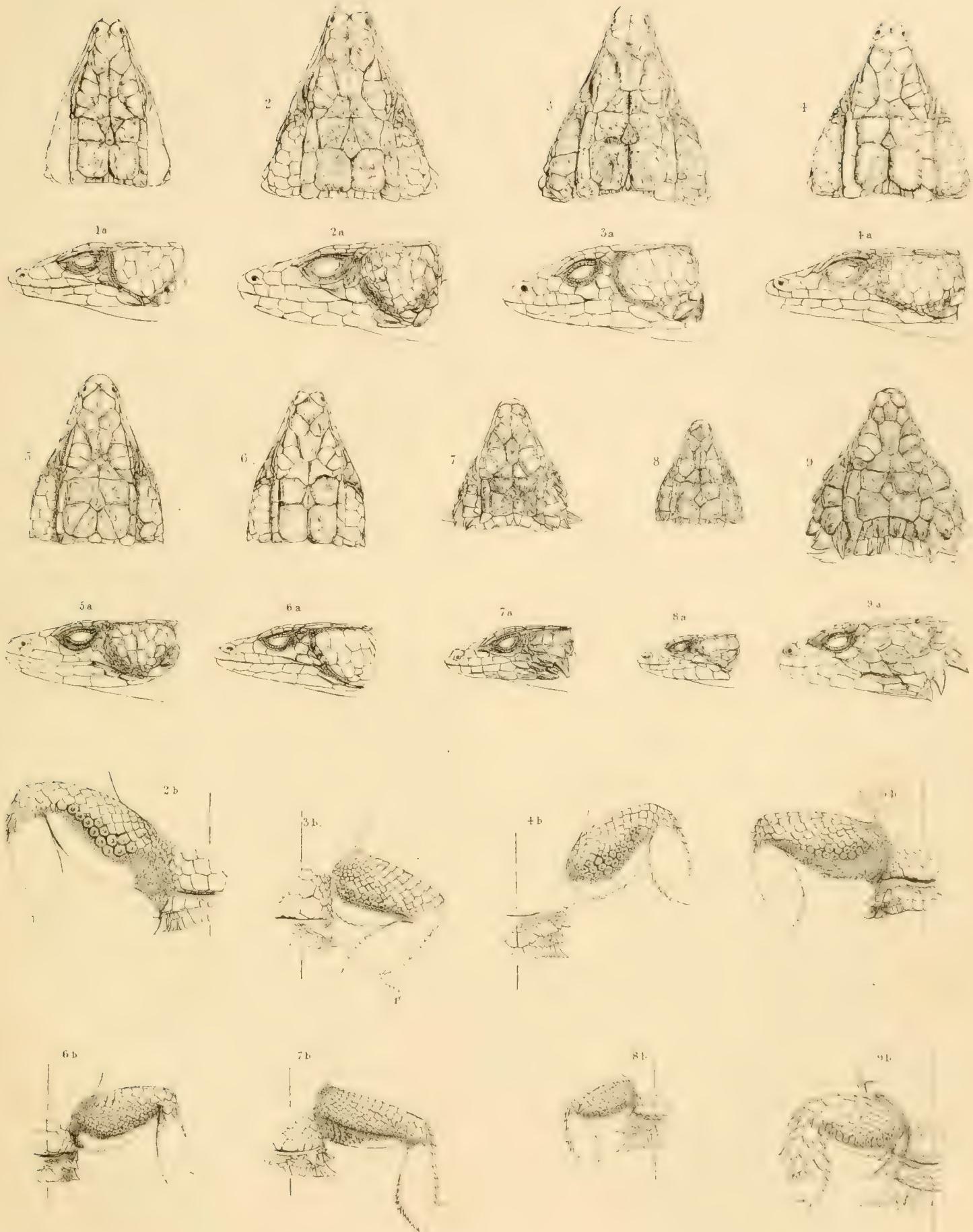
COLOUR.—The upper and lateral parts of the head and body intermediate between yellow and orange-coloured brown, darkest on the upper surface of the head, particularly towards the nose, the middle of the back faintly tinted with green. Tail and extremities clear yellowish brown. The belly and under surface of tail dull brownish red, clouded with dirty light yellow; space between *rami* of lower jaw and also the throat umber-brown, spotted with king's-yellow.

FORM, &c.—Head rather large and much depressed, its sides anteriorly nearly perpendicular, posteriorly convex, and laterally very protuberant; neck narrower than the head; body depressed and subovate; tail thick at the base, acute at the point. The upper surface of the head is flat, the plates covering it finely granular, and the shape of each will be best comprehended from an examination of Plate XXX. figs. 9 and 9 a. The scales of the temples are large, irregular-shaped, and tubercular, some of them almost keeled, and the hinder ones, which overlap the external ear, are prolonged so as to form acute spiny points. Labial scales of upper jaw six, the last three tubercular and carinated; those of lower jaw five, the last two horizontally compressed, thin and highly keeled. Nostrils near the apex of the muzzle each small, circular and opening in the centre of the naso-nostral plate, which is prominent and hemispherical. The sides and upper surface of the neck

CORDYLUS CATAPIIRACTUS.

and body covered with transverse zones of rugged scales, each scale more or less distinctly carinated, and the *carinæ* of those of the lateral parts much prolonged, so as to constitute prominent spines, which on the neck project directly outwards, and on the sides of the body outwards and backwards. Tail encircled with rows of rugged keeled scales, the hinder extremity of the keels very strong, and produced so as to form high triangular spines. The scales of the fore-legs are somewhat triangular in shape and strongly keeled, the keels prolonged into spines; those on the under surface smallest; the scales on the upper surface of the hinder legs like those on the fore-legs, only larger; those on the anterior surface large, somewhat quadrangular, and quite smooth; on the under surface small and smooth; scales between *rami* of lower jaw small, somewhat quadrangular, and arranged in incomplete transverse rows, the four scales nearest to the mental plate much the largest; the scales on the throat rather large, somewhat quadrangular, and placed in arched rows, the convexity backwards; the scales of the belly are arranged in transverse rows, fourteen or sixteen in each, and are quadrangular in shape and perfectly smooth. Pre-anal space covered with smooth scales, irregularly shaped and disposed; space immediately behind anus with a transverse band of small irregular scales, and on each side the anterior angle of this band is bounded by a large solitary prominent and spiny scale. Feet small; toes and claws short, the latter much curved and pointed. Full grown specimens of this species sometimes measure twelve inches in length, and the tail in those instances is generally about seven inches long.

This species is rather rare in South Africa, and the only specimens which have come under my notice were obtained on the western coast of the Colony, towards the Namaqua country. It inhabits rocky precipices, and when disturbed in those localities, it endeavours to conceal itself under masses of stone, or in crevices which may exist in the rock. The remarks which will be found under *Cordylus microlepidotus*, will equally apply to this species; indeed it holds so firmly by means of the prominent spinous scales of the temples and sides, that before it can be extricated from its retreats, it is often necessary to displace the masses of stones between which it may have insinuated itself.



GENUS CORDYLUS
(Plate 30.)



VIPERINUS
(Reptilia — Plate 32.)

VIPERA CORNUTA.—AUCT.

REPTILIA.—PLATES XXXII AND XXXIII.

V. suprà purpureo-grisea, flavo-griseo-tincta; partibus superioribus ordinibus quatuor macularum castanearum variegatis; infrà subochrea, purpureo-brunneo-maculata.

LONGITUDO e naso ad basin caudæ 12 unc.; caudæ 1½ unc.

HORNSMAN of the *Cape Colonists*.

COLOUR.—The ground colour of the upper and lateral parts lavender-purple, tinted with yellowish grey, and broken by four rows of somewhat quadrangular chesnut-brown spots, each spot freckled or spotted with liver-brown. The spots of the two central rows which extend along the back, are the most regular in form; those of the two other rows are smaller, less distinctly defined, and disposed irregularly, particularly towards the head and tail. Each spot is narrowly edged with bluish white, and the space between such of the spots of the central and lateral rows as are opposed to each other, is bluish white, tinted with pale Dutch-orange. The sides of the head are brownish red with an oval bluish white blotch on each temple, and an oblique yellowish white bar between the under eyelid and the edge of the upper lip. The under parts pale sienna-yellow, mottled with light liver-brown spots and dots. Eyes clear brown.

FORM, &c.—Figure rather robust, greatest thickness near middle of body. Tail short, conical, and pointed. Head posteriorly considerably broader than the neck, above it is slightly convex, between the eyes rather concave; the temples are much bulged and the muzzle broad and rounded; the upper lip is much more protuberant than the margin of the upper surface of the head. The eyebrows are curved and armed with a clump of lengthened spinous scales forming a sort of short horn. Fangs large and considerably curved. The neck is rather slender, and like the body is somewhat cylindrical. Tail flat below and subtriangular above. The skin covering the head and tail is firmly attached to the parts under it, that of the neck and body rather loosely.

VIPERA CORNUTA.

The scales of the temples and posterior parts of head ovate and carinated, of the upper and anterior parts, subcircular and carinated, and of the sides of the head before the eye, small and without keels. The scales of the body and tail ovate and all strongly carinated, except the row of each side of the body which adjoins the abdominal plates. On the body the scales are disposed in oblique transverse rows, twenty-five in each. The abdomen is rather flat and of moderate width, the subcaudal scales six-sided, and are replaced near to its tip by scales like to those on its upper surface; the scales between *rami* of lower jaw in front of abdominal plates small, somewhat five-sided and imbricate. Abdominal plates of individual figured, 125; subcaudal scales 25. Length from nose to tail 12 inches; length of the tail $1\frac{1}{2}$ inches.

VIPERA LOPHOPHRYS.—Cuv.

PLATE XXXIII.

COLOUR.—Rusty yellowish brown, variegated with four longitudinal rows of irregular, lengthened, blackish brown spots or stripes. The spots of the two middle rows are towards the posterior parts small and irregular and on the latter are in some places confluent, so as to form short waved transverse bars; the spots of the lateral rows towards the head are small, and on the tail, instead of being distinct, each row fades into a sort of irregular serrated or zig-zag dark line. Belly pale yellowish brown freckled with small somewhat quadrangular liver-brown spots. The sides of the head are faintly marked with two brownish red bars, one running obliquely from the outer canthus of the eye to the angle of the mouth, the other vertically from the inner canthus to the edge of the upper lip. Many of the spots of the body have their disc chesnut-brown, and several of them are edged more or less completely with bluish white. Besides the spots already described, several irregular sienna-yellow blotches exist principally between the central and lateral rows of dark spots.

FORM, &c.—Body lengthened, cylindrical, rather thicker at the middle than at the back of the head, or base of the tail; the latter is short and rather blunt at the point. The scales are strongly carinated and disposed in oblique transverse rows, 27 in each. The spinous scales over the eyes are rather long and



PLATE V.—SNAKE OF THE
INDIAN ISLANDS.

VIPERA LOPHOPHRYS.

flexible. In the specimen described, the length from the nose to the tail is 17 inches, and the length of the tail 2 inches 2 lines. The abdominal plates are 131; the subcaudal scales 28.

Vipera cornuta and *V. lophophrys* are, without doubt, identical; the latter is simply either the reptile of a more advanced age, or a variety peculiar to certain localities. The result of my experience inclines me to the latter conclusion, as I have never heard of specimens of *V. lophophrys* having been procured beyond the limits of Namaqua-land, a district of the western and southern division of the Colony. Even in that district examples are rarely to be procured; and though I was many months exploring in it, I only met with two individuals, and those were in fellowship, of equal size, marked exactly alike, and proved to be male and female. Those specimens I subsequently showed to the natives of other parts of South Africa, and received for answer, that they were the Hornsman, but of a different kind to that known to them, it being understood that the kind they spoke of, as that with which they were acquainted, was the *V. cornuta*. Upon these grounds I regard it as a variety of the locality mentioned.

On close examination of the two kinds or varieties, some individual differences are discovered, which, if they were permanent, might be regarded as indicating them to be of two species; but that not being the case, and as it appears the like variations occur even in the same variety, they cannot be regarded as suited to furnish specific characters. In the *Vipera cornuta* which is described, the rows of scales on the body consist of twenty-five, but in others I have counted only twenty-three. Hence, nothing important can be attached to there being twenty-seven in *V. lophophrys*.



N A J A H Æ M A C H A T E S
(Reptilia — Plate 34 .)

NAJA HÆMACHATES.—AUCT.

REPTILIA. PLATE XXXIV.

N. suprà nigro-brunnea, fasciis rufo-flavis, irregularibus, variegatis; infrà livido-nigra, anticè fasciis duabus tribusve transversis, notatis; squamis fortiter carinatis.

LONGITUDO e naso ad caudæ apicem, inter 2 et 3 pedes.

VIPERA HÆMACHATES, *Daud. Seba. Latreil.*

SEPEDON HÆMACHATES, *Merr. Wagler.*

NAJA CAPENSIS, *Smith.*

RING HALS SLANG of the *Cape Colonists.*

COLOUR.—The ground colour of the upper and lateral parts either blueish brown or greyish brown, and variegated with a great number of narrow, jagged, or serrated and waved transverse bands, varying in tint from ochre yellow to light yellowish white. The space between the *rami* of the lower jaw, together with the throat, livid black or dull brownish red; the remainder of the under parts livid greyish black, crossed anteriorly with two or three broad transverse bars of a yellow or rusty white colour, and laterally variegated with irregular white spots. On the body the dark colour predominates greatly, but on the tail the two tints are almost in equal proportions, and disposed nearly in complete rings. Eyes dark brown.

Variety.—Ground colour dull blackish brown, crossed with numerous, narrow, deep blueish brown bars, only distinctly visible when the surface of the skin is cleared of impurities either with a moist cloth or a wet sponge. Until such cleansing shall have been practised the snake appears of an uniform dull blackish brown tint.

FORM.—Figure rather robust. Head scarcely broader than the neck, above flat, anteriorly rather narrow, and the upper lips protrude beyond the edge of the upper surface of the head, hence the eyes appear rather sunk, giving a malignant and savage expression. Nostrils large, and open backwards and outwards; no frenal scale; rostral plate triangular, its upper angle entering deeply between the anterior frontal plates; postocular scales three, antecular scale one; temporal plates large and irregularly shaped. Neck depressed

NAJA HÆMACHATES.

as broad as the head, and edged with a quantity of loose skin, which forms a fold on each side when the reptile is quiet and free from excitement, but when the case is otherwise, the fold is extended laterally, so as to form a broad fringe on each side, which constitutes what in snakes of this genus is denominated the hood. Body subcylindrical or subtriangular, and covered with a skin only loosely attached to the parts within it; the scales covering the skin are ovate, and all, excepting those of the two rows on each side nearest to the abdominal plates, strongly carinated. Tail short, subcylindrical, and pointed, the skin closely connected to the internal parts, and the scales towards its commencement slightly carinated, the rest smooth. Abdomen broad. The scales of the body are disposed in oblique transverse rows, nineteen in each. Length of specimen figured thirty-one inches, of which the tail measures four and a half inches. Abdominal plates, 129; subcaudal scales, 33. These were the numbers of the specimen figured; the following are those counted on others: 150—30; 143—43.

The range of this species is very considerable, and specimens of it have been found in almost every district of South Africa which has yet been explored. It appears to prefer localities in which the soil is loose, sandy, and coated with brush-wood: hence individuals are to be very readily procured on the sandy flats near to Cape Town and the coasts of the colony. It is one of the most vigilant of snakes, and its resting place can very rarely be approached before it is all activity, either commencing to fly, preparing to maintain its ground, or make an attack. When it flies it almost invariably seeks some subterranean retreat, which is in general discoverable without difficulty, from its being usually a resident of situations where the burrows of mice, moles, or other small quadrupeds exist in abundance. The aborigines, as well as the colonists, reckon this to be the most courageous of all the South African snakes, and they highly dread the power of its poison. When in confinement, and irritated, it evinces great ferocity, it opens its mouth so as to be in readiness to seize on any object that may approach within its reach, and while open the poisonous fluid is to be seen distilling in drops from the fangs, which are on such occasions always raised to the proper position for performing their functions. During such periods of excitement it often ejects, by some means, a portion of the fluid to a distance from its mouth; and the inhabitants even affirm that it is able to cast it more than several feet, and that in doing so it generally attempts to lodge it in the eyes of men or animals. Elsewhere I shall take occasion to remark more at length upon this reputed power.

C O R D Y L U S G I G A N T E U S

(Reptilia Plate 35)



CORDYLUS GIGANTEUS.

REPTILIA.—PLATES XXXV., XXXVI.

C. flavo-brunneus inferne pallidior, dorso caudâ supernè extremitatibusque supernè fusco-nebulatis; occipite, temporibusque postice spinis fortibus triangularibus in ordinè singula armatis; dorsi squamis leviter carinatis, laterum fortiter spinosis; caudâ supernè spinosissimâ; extremitatibus anterioribus inferne squamis tuberculosis; poribus femoralibus decem.

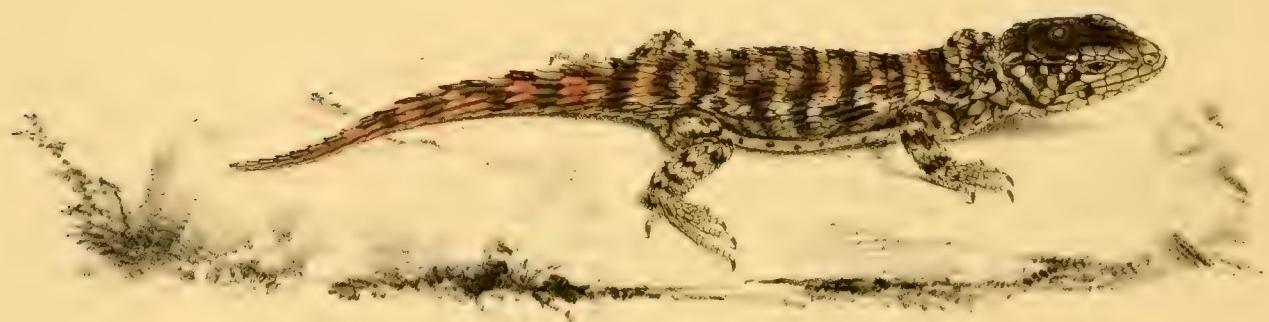
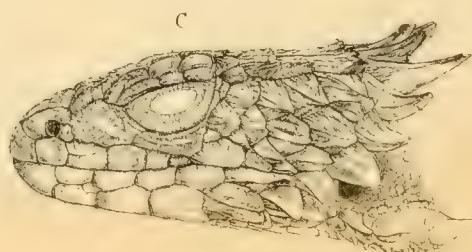
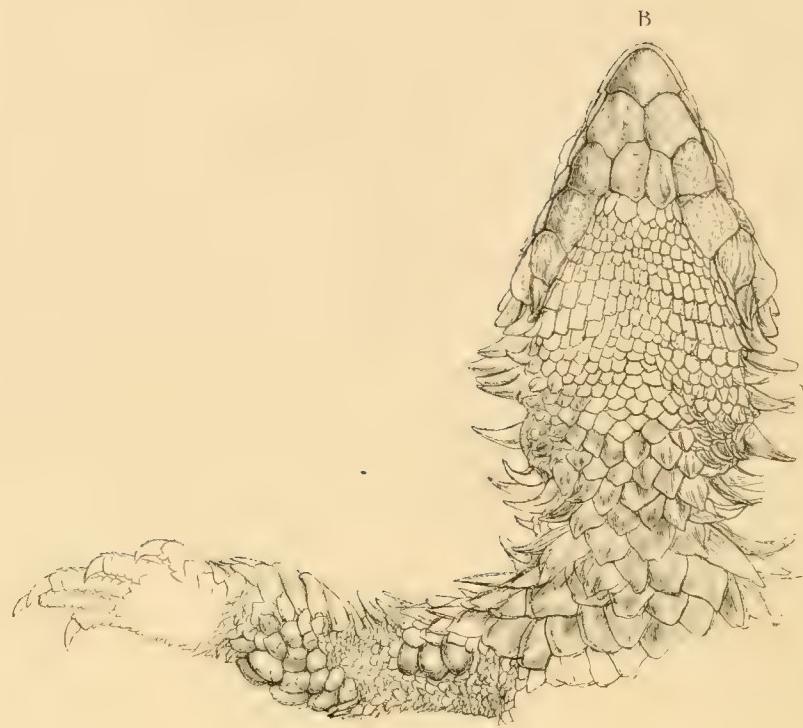
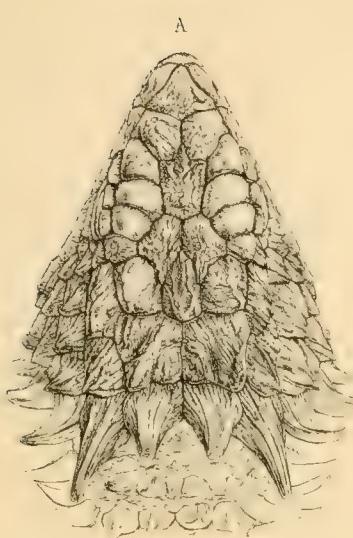
LONGITUDO e naso ad basin caudæ, 8 unc. Caudæ, 7 unc.

COLOUR.—The upper surface of the head posterior to the eyes, deep umber brown, anteriorly, towards nose, dark yellowish brown; the temples, posteriorly, of the former colour, anteriorly, yellowish brown; the lips and throat intermediate between sienna and straw-yellow; the sides of the lower jaw freckled yellowish brown. The back, sides of body, tail, and extremities, intermediate between sienna and honey-yellow, the tint on the back and upper surface of the tail darkest, and particularly towards and on the line of the spine, irregularly clouded with umber brown; the extremities are also more or less shaded or clouded with the same colour. Belly wine yellow; the scales in front of femoral pores, yellowish brown. Eyes reddish brown. Claws, umber-brown.

FORM, &c.—Figure robust, and aspect rugged and repulsive. Head rather flat, broad, and posteriorly bulging; the upper surface, behind eyes, nearly even,—before eyes, slightly convex, and in both places covered with very hard rough plates, those towards nose subtubercular; superciliary plates seven on each side, disposed in rows of threes, with the seventh placed behind them; the plates of the internal row largest, and with the exception of the seventh, are smooth and without striæ; nostrils cylindrical, and situated towards the hinder extremity of the nasal plates; labial plates small, eight above and five below, the last of the lower lip and the three last of

CORDYLUS GIGANTEUS.

upper sub-keeled, and unlike the ones before them, which are quadrangular and flat. Hind head and temples posteriorly margined with a row of long striated somewhat triangular and pointed spines which extends from the base of the lower jaw of one side to the same part on the other ; the four edging the hinder part of the head superiorly directed backwards and very slightly outwards, the five edging each temple outwards and very slightly backwards, and are considerably shorter than the former. The scales, four, covering the lower jaw very large, the three first quadrangular, the last somewhat pointed behind. Scales of temples large, imbricate, striated, triangular, and with the apex pointing backwards. The scales on the neck and body superiorly, and on the sides arranged in regular transverse rows, the base of each scale being flat, more or less quadrangular, and with a keel proceeding along its middle ; the scales of the sides of the back, body, and neck terminate, is a strong triangular divergent spine ; those on the sides of the neck longest, rather irregularly placed, and extend nearly directly outwards : as compared with the sides, the back is comparatively smooth, the scales being only rugose and faintly carinated. The scales of the upper and lateral parts of the tail in whorls, very rugged and hard, and each has a prolonged triangular spine directed outwards and backwards ; the scales of the under surface long, narrow, five-sided, smooth, and pointed behind. The scales of the extremities superiorly and anteriorly flat at base, and each is surmounted by a divergent spine more or less developed ; the spines of the fore legs towards the body prominent towards the toes, only faint ; on the hinder legs the spines generally are strongly marked. The under and hinder surfaces of fore legs towards body are covered with small irregular, somewhat granular scales which anteriorly are edged near the body by a row of three very large tubercular scales very different from the others described : and besides these there is, towards the foot, on the opposite side of the under surface of the legs, a cluster of conical tubercles generally arranged in three or four longitudinal rows, and having their points inclined towards the toes. The feet and toes covered with triangular flat scales, those below slightly rugose. The under surface of hinder legs towards body is covered anteriorly with flat triangular scales, posteriorly towards femoral pores with slightly tubercular ones. The space between rami of lower jaw coated with small irregular roundish scales, the middle ones smallest, and anterior to them are four large plates in two rows, the two of the front row the largest. Scales of lower surface of neck trian-



CORDYLOUS GIGANTEUS (young)
(Reptilia, Plate 36)

CORDYLUS GIGANTEUS.

gular, flat and imbricate; those of breast and belly are of the same form and similarly disposed, but are more recumbent. Preanal space with a number of scales, three of which are very large and placed in the centre of the smaller ones, two in one row and the third in front of them. Femoral pores in one row ten or eleven in number, and each with an obtuse spongy point. Claws short, slightly curved and pointed. The commencement of the neck above and the sides of the body immediately in front of the hinder legs without spines.

Length from nose to base of tail, 8 inches: of tail, 7 inches.

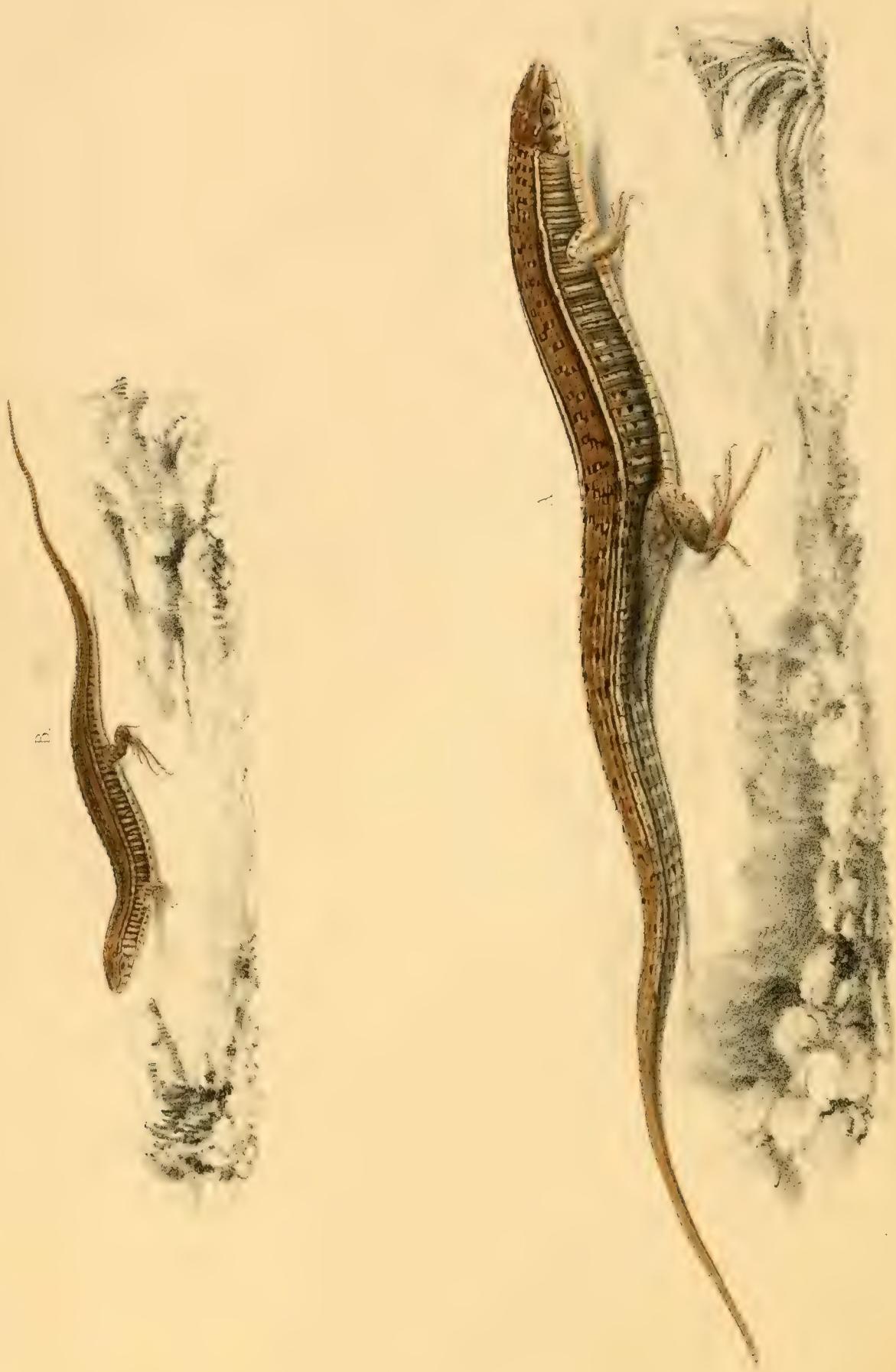
YOUNG.—PLATE XXXVI.

COLOUR.—The upper part of the head posterior to the eyes, and the back and sides of the body intermediate between umber and liver-brown. The colour of the back and sides broken, however, by four or five narrow irregular bars of cream-yellow, the anterior part of the head light yellowish brown clouded with liver-brown; the temples liver-brown, irregularly spotted with greenish-white; tail above towards base deep umber brown, barred with cream yellow, below cream yellow and towards tip both above and below, pale orange red. Extremities barred alternately, cream yellow and liver-brown.

FORM.—Figure rather slender, and aspect not disagreeable from the scales not being developed and surmounted with the strong rugged spines which exist in the adult; the form of the scales and the peculiarities they exhibit on different parts of the adult are also exhibited on the young, so that in knowing the characters of the former there is no difficulty in recognising the latter.

Inhabits the interior districts of Southern Africa, and is not unfrequently seen on the rocky pinnacles of the Quathlamba mountains, which separate the country of the south-east coast, from that of the interior. Another large lizard of this genus is said to exist among and on the mountains of Great Namaqualand; but when specimens of this shall be obtained it will probably prove to be of the species here described.

(GEOGLOSSUS CORDIGERUS. (Adult (B. Young.)
Lacertidae (See 57.)



GERRHOSAURUS FLAVIGULARIS.—WIEGM.

REPTILIA.—PLATE XXXVII.

G. superne flavo-brunneus, lineâ flava pone oculos incipiente et lineâ nigra in utroque latere marginata, illa versus apicem caudæ, his pone basin caudæ desinentibus; dorsi partibus mediis nigro brunneo variegatis et flavo-punctatis; corporis lateribus griseo-brunneis, nigro brunneo-maculatis et flavo-fasciolatis; mento gulâque flavis; pectore abdomineque cœruleo-albis; scuto occipitale rhombica.

LONGITUDO è naso ad basin caudæ, 3 unc. 6 lin.; caudæ, 8 unc.

CICIGNA SEPIFORMIS, *Gray*, Synops. Rept. Griff. Animal Kingdom of Cuvier, vol. 9.

SCINCUS SEPIFORMIS, *Merrem*, Versuch ein Syst. der Amphib, page 70.

PLEUROTEUCHUS CHRYSOBRONCHIUS et DEJARDINII, *Smith*, Mag. of Zool. and Botany, vol. i. p. 143, et seq.

GERRHOSAURUS OCELLATUS, Coct. Magaz. Zool. Guer, cl. 111, pl. 4, et pl. 6, fig. 1.

COLOUR.—The upper surface of the head, the back, and the tail superiorly deep yellowish brown, the apical portion of the latter lightest; on the back and tail the ground colour is broken by various variegations partly yellow and partly liver-brown, on the middle of the back and base of the tail these variegations consist of one, two, or more series of small square yellow spots, each either placed upon a liver-brown bar or spot, or edged on both its sides with that colour. On the edges of the back and tail the same colours constitute the variegations, but instead of being in spots or bars they are in narrow longitudinal lines commencing near the outer angle of the eye and terminating beyond the last half of the tail; these lines are three in number on each side, viz.:—the middle one yellow, and the outer and inner ones liver-brown. On the tail these lines are rather indistinct and often broken. The sides of the body from the eyes backwards are greyish brown, profusely variegated with spots and irregular vertical stripes of yellow and liver-brown. Outer surface of fore legs light yellowish brown freckled with minute, umber-brown and yellowish white spots; the outer surface of hinder legs purplish brown and freckled with the same colours and in the same

GERRHOSAURUS FLAVIGULARIS.

manner as the fore legs; feet and toes yellowish brown. Under parts and inner surface of extremities livid cream-yellow, and the sides of the belly are marked with an irregular row of pale purplish brown spots; upper and under lips yellow, dotted with umber brown; chin and throat pale yellow. Eyes reddish brown.

FORM, &c.—Figure fusiform and the tail tapered to a fine point. Head small and tapered anteriorly, the nose obtusely pointed. Body somewhat quadrangular, the angles rounded and the back and sides slightly convex. Tail towards base quadrangular, towards point cylindrical. Frontal plate five sided, anteriorly triangular; vertibral plates four, the two middle ones the largest and all externally edged with a row of oblong narrow plates which form the upper margin of the orbit. Fronto-nasal plate large and diamond-shaped; the inner and hinder parts of the fronto-parietal and the anterior and inner parts of the parietal plates separated from each other by the intervention of a small diamond-shaped occipital plate. Temporal plates small, many-sided, and generally seven in number,—one in the centre, and six surrounding it. Labial scales six on upper jaw, and four on lower; the fourth scale of the upper the longest, and situated directly below the eye. *Meatus auditorius externus* narrow, vertical and in front partly concealed by a triangular or somewhat semicircular scale, which extends outwards and backwards from the hinder edge of temple. Lateral duplication of skin moderately developed. Scales of body and tail quadrangular and arranged in transverse rows, each scale with a central carina. Mental plates four, the two hinder ones the largest; the throat and breast covered with somewhat six-sided scales, in shape like two triangles joined at their bases. These scales are arranged in longitudinal rows, are slightly imbricate and larger on the breast than the throat. Plates of the belly disposed in transverse rows ten in each, of a quadragular form and perfectly smooth. Preanal plates three in a single row, the middle one of a diamond-shape excepting that anteriorly it is truncate. Scales covering the under surface of tail at base quadrangular and smooth, towards tip triangular with their apex rounded. The fore legs are coated with smooth subovate and imbricated scales; the hinder ones anteriorly and inferiorly with large somewhat six-sided scales; posteriorly with small triangular and carinated scales. Femoral pores fifteen or sixteen, and protrude but very little beyond the scales lying anterior to them. Soles of the feet coated with small subgranular scales.

GERRHOSAURUS FLAVIGULARIS.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the nose to the base of the tail	3	6	Length from nose to base of fore legs	1	2
of the tail	8	0	between fore and hinder legs	2	2
from nose to <i>meatus auditorius</i> <i>externus</i>	0	10	of fore legs to toes	0	7½
			of hinder legs to toes	1	2

The colours of the *male* and *female* are nearly if not quite alike.

A variety of this species is occasionally procured in Southern Africa, on which only very few if any of the yellow and liver brown spots exist, which are described as occurring on the back and sides of the individuals more commonly obtained. This variety is represented by Wagler,* and all the specimens of it which I have seen had the chin and throat coloured as represented in his plate.

Both are found within the boundaries of the Cape Colony; but the one which is most profusely variegated is by far the most common. The former I have only seen in damp shady situations, abundantly coated with brushwood; the latter sometimes in similar situations, but more frequently in dry, arid plains, furnished with a considerable quantity of underwood. In whatever situations they are discovered, they always immediately seek concealment, and generally attempt it by burrowing under decayed leaves, or loose earth. The range of this species is extensive, and specimens were obtained by the expedition party, even as far north as the Tropic of Capricorn.

* Descriptiones et Icones Amphibiorum Auctor, Dr. J. Wagler, Plate xxxiv.



1.



2.

1. *GERRHOSAURUS BIBRONI*
2. *GERRHOSAURUS TYPICUS*.

GERRHOSAURUS BIBRONI.—SMITH.

REPTILIA.—PLATE XXXVIII. FIG. 1. (MALE.)

G. superne rubro-brunneus, lineis duabus sublatis et duabus angustis variegatis, his ad basin caudæ, illis versus apicem desinentibus; mento, gula, capitis lateribus, guttere, extremitatibusque anterioribus interne minatis; pectore abdomineque griseo-albis; scuto occipitale rhombica.

LONGITUDO è naso ad basin caudæ 4 unc. 6 lin.; caudæ 6 unc.

COLOUR.—The upper surface of the head chesnut-brown; the sides and under surface of the head and the throat anteriorly vermillion-red; the back, the sides of the body, the upper parts of the tail, and the outer surface of the extremities intermediate between brownish red and deep orange coloured brown. The back is variegated with four yellow lines and the tail with two, which are the continuations of the two external lines of the back, and which commence above and over the eyes. These lines are wider than the other two which extend along the middle of the back, have a greenish tinge, and are very narrow and slightly broken; the latter commence at the hind-head and terminate at the base of the tail, and become less distinct as they recede from the head. The throat posteriorly, the breast, belly, under surface of tail and inner surface of extremities greyish white, the colour on the fore legs tinted with vermillion-red. Eyes deep chesnut-brown.

FORM, &c.—Figure moderately slender and fusiform; tail tapered to a point. Head quadrangular and tapered towards the nose, which is obtusely pointed. Body and base of tail quadrangular, the angles rounded, and the back and sides, but especially the latter slightly convex; tail towards the point cylindrical; internasal plate large, triangular, and diamond shaped. Naso-rostral plates small roundish, and the nostrils towards their lower margin. Fronto-parietal plates five-sided, sides unequal; parietal plates three-sided, the inner side arched with a small diamond shaped occipital plate situated partly between them and partly between the inner and hinder angles of the fronto-parietal. Palpebral plates four, the two middle ones the largest, and the whole margined externally by a row of narrow oblong plates which form the upper edge of the orbit. Temporal plates small, subcircular, and placed like stones in a pavement; scales of upper lip six, exclusive of the rostral plate, the fourth, reckoning from before backwards, the longest; *Meatus externus* small and vertical, broadest below, and anteriorly edged with a slightly projecting scaly plate. Lateral duplicature of skin, which extends

GERRHOSAURUS BIBRONI.

between angle of jaw and base of hinder leg, well developed. The scales of the back and sides quadrangular, and disposed in transverse rows, each with a strong keel along its centre, and others less developed towards the sides. Scales of the upper and lateral portions of the tail similarly shaped to those of the body, but have only the central keel, which forms a projecting point behind; mental plate large and semicircular behind; to this plate succeed four other plates, the two hinder ones the largest; the throat and breast are coated with large imbricate somewhat six-sided scales, broadest transversely, and arranged in longitudinal rows. The plates of the belly are disposed in transverse rows, eight in each, are of a quadrangular form and perfectly smooth. Scales of the lower surface of the tail rather long, narrow, and slightly rounded at the point. Fore legs slender and covered with smooth, imbricate, somewhat six-sided scales; hinder legs anteriorly and inferiorly with scales of a like description only larger, posteriorly, with small triangular ones strongly carinated, the carina forming the apex of each; scales on soles of feet small and slightly granular. Femoral pores twelve, and nearly quite concealed by the row of plates immediately in front of them. Preanal plates three in a row, the central one triangular with its apex pointing backwards. Toes of fore feet short and slender, the inner, that which corresponds to what is called the great toe, shortest, the second considerably longer, the third the longest, the fourth a little shorter than the third, and the outermost rather longer than the innermost. The third and fourth toes of the hinder feet are much longer than those of the fore feet, and the third exceeds considerably in length the fourth; the outer and second toes are also much longer than the corresponding ones of the fore feet.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the nose to the base of the tail	4	6	Length from nose to base of fore legs	0	11
of the tail	6	6	Distance between fore and hinder legs	3	0
from nose to <i>meatus externus</i>	0	9	Length of fore legs to toes	0	9
			of hinder legs to toes	1	2

Female.—As regards the colouring the two sexes are nearly alike, but the female is more robust than the male, and the tail proportionally shorter.

The only specimens of this Lizard which I have seen, were obtained towards the sources of the Caledon, one of the principal branches of the Orange River. They were all discovered in the dark and shaded ravines which form breaks in the Quathlamba mountains, and when they were pursued they sought concealment under the dead leaves and decaying wood which abounded in the ravines in question.

GERRHOSAURUS TYPICUS.

REPTILIA.—PLATE XXXVIII. FIG. 2.

G. superne aurantio-brunneus, inferne griseo-albus, lineâ flava pone oculos incipiente et lineâ nigro in utroque latere marginata, illâ versus apicem, his pone basin caudæ desinentibus; corporis lateribus nigro brunneo-umbratis et labeculis triangularibus variegatis, scuto occipitale quinquelaterale.

LONGITUDO è naso ad basin caudæ 4 unc. 6 lin.; caudæ 6 unc. 6 lin.

PLEUROTUCHUS TYPICUS, Smith, Mag. Zool. and Botany, vol. i. p. 143.

GERRHOSAURUS TYPICUS, Dum. et Bib. Erpet. Général, tom. v. p. 383.

COLOUR.—The upper and lateral parts of the head, the back, and the upper and lateral parts of the tail deep orange-coloured brown, the two latter with two contiguous longitudinal stripes on each side, the external stripe the narrowest and pale cream-yellow, the internal deep liver-brown, fading at its inner edge into the tint of the centre of the back; the light stripe commences immediately over and above the eye, and terminates near the point of the tail, though on the latter it is not so defined as on the former; the dark one commences at the hind head, and is lost about the middle of the tail. The sides are variegated with several series of irregular light yellow spots, which are most distinctly defined between the fore and hinder legs, and in addition to these spots there are also others of a liver-coloured brown. The variegations on the sides of the tail are confusedly disposed, and in many places run into each other. The under parts and the inner surface of the extremities dull cream-yellow, inclined to greyish yellow. Eyes orange coloured brown.

FORM, &c.—Figure fusiform, the tail very long and slender towards the point. Head small, short, and tapered towards the nose, which is obtusely pointed. Body quadrangular, the angles rounded, and the back and sides but more especially the latter convex. Tail quadrangular towards its base, cylindrical towards the point. The naso-rostral plates sub-hemispherical, and the nostrils towards their centre; supraciliary plates four in number, the two central ones the largest, and externally all are edged with a row of narrow, oblong plates, which form the upper edge of the orbit; fronto-parietal plates subcordate, the apical portion directed outwards; parietal plates four-sided, the inner side of each much shorter than the outer, and is as well as the hinder angle of the fronto-parietal separated from its fellow of the opposite side by the intervention of a small five-sided occipital plate; internasal plate large and diamond-shaped. Temporal plates seven or eight, each many-sided, and of various sizes, the smallest ones towards the centre. Scales of upper lip six in number, the fourth, from rostral plate; the longest, those of

GERRHOSAURUS TYPICUS.

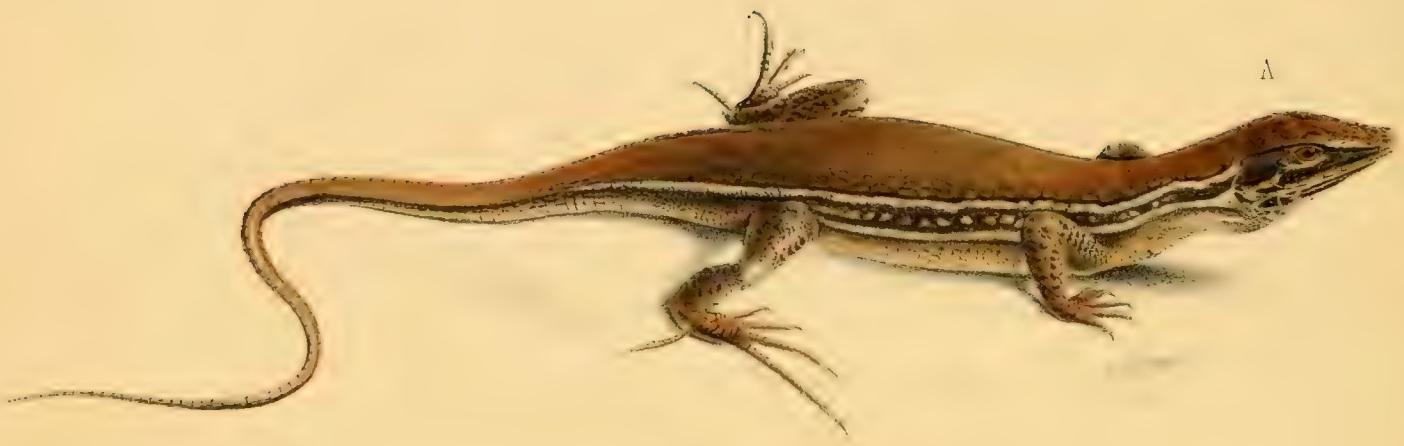
lower lip four, the last but one much the largest. Scales of back and sides quadrangular, arranged in transverse rows, and each strongly carinated; the scales of the upper and lateral portions of the tail are of the same form as those of the back, similarly arranged and carinated. Lateral duplicature slightly developed, space between *rami* of lower jaw anteriorly with four large plates, the two first the smallest; throat behind these and the breast coated with six-sided smooth imbricate scales, their greatest width transversely, and all arranged in longitudinal rows. Plates of the belly arranged in transverse rows, ten in each, of a quadrangular form, and each row lying over the base of the one behind it. Preanal plates, three in a single row, the middle one triangular, and its apex directed backwards. Scales of under surface of tail smooth, broadest at base tapered towards point, which is slightly rounded. Fore legs coated with smooth imbricate scales more or less six-sided; hinder legs anteriorly and inferiorly covered with scales of the same description but larger; posteriorly the scales are triangular and strongly keeled. Femoral pores sixteen, large, and prominent. Soles of the feet covered with very small somewhat oval scales. The toes of the fore feet short and slender, the innermost one very short, the second considerably longer, the third the longest, the fourth a little shorter than the third, and the outermost rather longer than the innermost. The third and fourth toes of the hinder feet, reckoning the great or inner toe one, are much longer than those of the fore feet, and the third exceeds considerably in length the fourth; the second and outermost toes are also much longer than the corresponding ones of the fore feet.

DIMENSIONS.

	Inches.	Lines.		Inches.	Lines.
Length from the nose to the base of the tail	4	6	Length from nose to base of fore legs	0	11
of the tail	6	6	Distance between fore and hinder legs	3	0
from nose to <i>meatus externus</i>	0	9	Length of fore legs to base of toes ...	0	9
			hinder legs to base of toes ...	1	2

The colours of the two sexes nearly the same.

The only specimens of this species which I possess were procured on the sandy plains which occur immediately to the south of the mouth of the Orange River. Over the sand of these plains they run with such extraordinary rapidity, that it is almost impossible for the eye to follow them in their flight. The instant they are discovered they seek a place of concealment, and that they generally find in the loose sand which is commonly found accumulated under the shrubs with which the district is furnished. In this sand they burrow with amazing rapidity, and it requires an experienced eye to trace their course in it, though that is seldom far below the surface.



A



B

ACANTHODACTYLUS CAPENSIS

(Reptilia. Plate 39. A. Male. B. Female.)

ACANTHODACTYLUS CAPENSIS.—SMITH.

REPTILIA.—PLATE XXXIX. *a*, MALE; *b*, FEMALE.

MAS. A. superne flavo-brunneus, lateribus nigro-brunneis, et macularum albarum seriebus duabus et lineis duabus longitudinalibus ejusdem coloris variegatis; partibus inferioribus ochraceis; digitis externe dentatis.

FEM. Superne pallide aurantius, lateribus rubro-aurantiis superne inferneque linea subalbida marginatis; partibus inferioribus ochraceis, versus latera nigro brunneo-tessellatis.

LONGITUDO e naso ad basin caudæ mas; 4 unc. 6 lin; caudæ 6 unc.

COLOUR, (MALE).—The upper surface of the head, the middle of the back, and the upper surface of the tail intermediate between yellowish brown and reddish orange, the first irregularly mottled with dashes of umber-brown and the back is freckled with small liver-brown dots, and marked with a short line of the same colour from centre of hind head. The sides of the body and of the tail at its base liver-brown, variegated with two longitudinal white bands, the uppermost commencing at the hind head and ending a little way beyond the base of the tail; the lowermost begins below, and behind the eye is broken by the intervention of the *meatus auditorius externus*, and terminates in front of base of hinder leg: over the first of these bands there is a stripe of small roundish spots of the colour of the back, only lighter, and between them a longitudinal row of round rusty white ones. The sides of the belly below the lowermost white line the same colour as the sides, the remainder of the belly, throat, under surface of legs, and tail, pale ochre-yellow. Upper surface of extremities liver-brown freely speckled with irregular yellowish white spots; toes transparent yellowish brown above freckled with umber-brown. Sides of head umber-brown, the lips, a line under the eye, and the edges of some of the scales towards hinder parts of lower jaw straw-yellow.

FEMALE.—The upper surface of the head brownish yellow; the back and centre of the tail above intermediate between Dutch and deep reddish orange; the sides of body and tail near its base intermediate between orpiment-orange and tile-red, and these two tints are kept separate from each other by the intervention of a narrow longitudinal whitish band, which commences at the hind head and terminates about the commencement of the

ACANTHODACTYLUS CAPENSIS.

second third of the tail, being edged both above and below by a distinct shade of liver-brown, which is most distinct on the tail, and extends much beyond the end of the light line. Below the red of the sides there is a second longitudinal yellowish white line which extends between the *meatus auditorius externus* and the base of hinder leg. Belly, throat, and under surface of legs ochre-yellow; the sides of the belly below the second light line closely mottled with liver-brown. Upper surface of extremities liver-brown with many spots of the colour of the back; toes and claws transparent brownish yellow, the former above, speckled with umber-brown. Temples the same colour as the sides of the body; the remainder of the sides of the head umber-brown.

FORM, &c.—Figure of male rather slender, the body and base of tail slightly depressed, and the latter moderately long and tapered to a very fine point: the female is rather robust, and each individual part is on a larger scale than in the male. Head quadrangular, superiorly, towards the nose gently sloped, towards the nape level. Frontal plate narrow and widest anteriorly; fronto-parietal plates five-sided, the side which joins frontal plate very short. Inter-parietal plate somewhat quadrangular and widest behind; interfronto-parietal plate diamond-shaped, and a portion of it between the antero-internal angles of the parietal plates. Naso-rostral plate large and behind pointed, the point lying between the fronto-nasal plates. Palpebral plates two, forming an oval disc which anteriorly and posteriorly is edged with scales, one of which, over and in front of the eye is rather large. Temples slightly convex, and covered with small granular scales. *Meatus auditorius externus* semilunar and margined anteriorly with a few small spinous scales. Skin of body rather loosely connected to the subjacent parts, and often forms a longitudinal fold on each side of the body, extending from the ears to the hinder leg, also occasionally a circular one behind the head, the loose edge of which is directed forwards. Scales covering back and sides small, circular, closely set, and slightly convex; those on base of tail superiorly the same, on sides of tail towards its base triangular and keeled, each keel prolonged and ending in a spinous point. About an inch beyond the commencement of the tail the small scales give place to oblong and quadrangular ones, which are arranged in whorls, and each has a distinct keel, which in some parts is prolonged beyond the scale in the form of a spinous point. Scales of the extremities partly rather large, triangular, and keeled, partly very small and granular. Abdominal plates quadrangular and disposed in transverse rows, about twenty-eight in each. Gular collar immediately in front of sternum distinctly indicated, the

ACANTHODACTYLUS CAPENSIS.

posterior loose edge of the scales forming it, triangular or slightly semilunar. Preanal plates in two or three rows, the middle one of the two hindermost rows much the largest and somewhat six-sided. Femoral pores twenty-eight. Toes long, slender, and each externally edged with a serrated fringe consisting of slender pointed scales. Length of adult specimens generally about ten inches, of which the tail forms about six.

This lizard is found on the sandy districts of Great Namaqualand, and where the surface of the country is irregular it is generally met on the highest spots. Where small sand-hills occur, it resorts to them in preference to the other localities, and, from the peculiar assistance it derives from the serrated fringe which edges its toes, it runs over the loose sand on the steep surfaces of those slopes, with great rapidity. It feeds upon small insects.

P L A T Y S A U R U S C A P E N S I S
(Reptilia—Plate 40)



PLATYSAURUS CAPENSIS.—SMITH.*

REPTILIA.—PLATE XL.

P. superne griseo-brunneus, dorso fascis tribus subalbidis notato; capite corporeque fortiter depresso; corporis squamis parvis; poris femoralibus 18; caudâ versus basin depressa versus apicem cylindracea; partibus inferioribus, viridi flavis.

LONGITUDO è naso ad basin caudæ 3 unc.; caudæ 4 unc. 8 lin.

COLOUR.—The upper portion of the head anteriorly, the centre of the hind head and its outer edges so far as the anterior extremity of each eyebrow greenish yellow; the other parts of the hind head light blackish green. Back and sides of body intermediate between hair and broccoli brown, the skin which is visible between the scales is darkest. Back varied with three longitudinal cream-yellow lines, faintly tinted with green, the two outer ones towards hinder legs slightly arched outwards. The central line commences exactly at the middle of the posterior edge of the hind head, and one of the others at each outer angle,—from these situations they proceed separately till they reach close to the base of the tail, where they coalesce and form a continuous light band which occupies the entire of its upper surface to the very point. Under surface of head, neck, body, and extremities wine-yellow, the two first tinted with flesh-red; under surface of tail the same colour, tinged with yellowish brown. The upper and lower lips, as also the under surface of the edges of the lower jaw wood-brown.

FORM.—Figure slender, with the belly bulging laterally; head small, and like the body and tail, is much depressed, posteriorly square, and anteriorly much tapered; the nose is narrow and rounded; nasal plate small, with the

* *Char. Gen. Platysauri.*—Teeth short, numerous, closely set, slender, conical and rather blunt; tongue fleshy and rather pointed; nostrils circular and situated near to the posterior and inferior edge of the naso-rostral plate; frontal plate single,† fronto-parietal plates, four, the two hinder ones and the parietals forming a square shield, like what is observed in *Cordylus*. Palpebral plates edged externally with a row of narrow plates as in *Gerrhosaurus*. Body much depressed, scales very small, abdominal plates quadrangular and arranged in transverse rows; femoral pores small but distinct. Gular collar rudimentary.

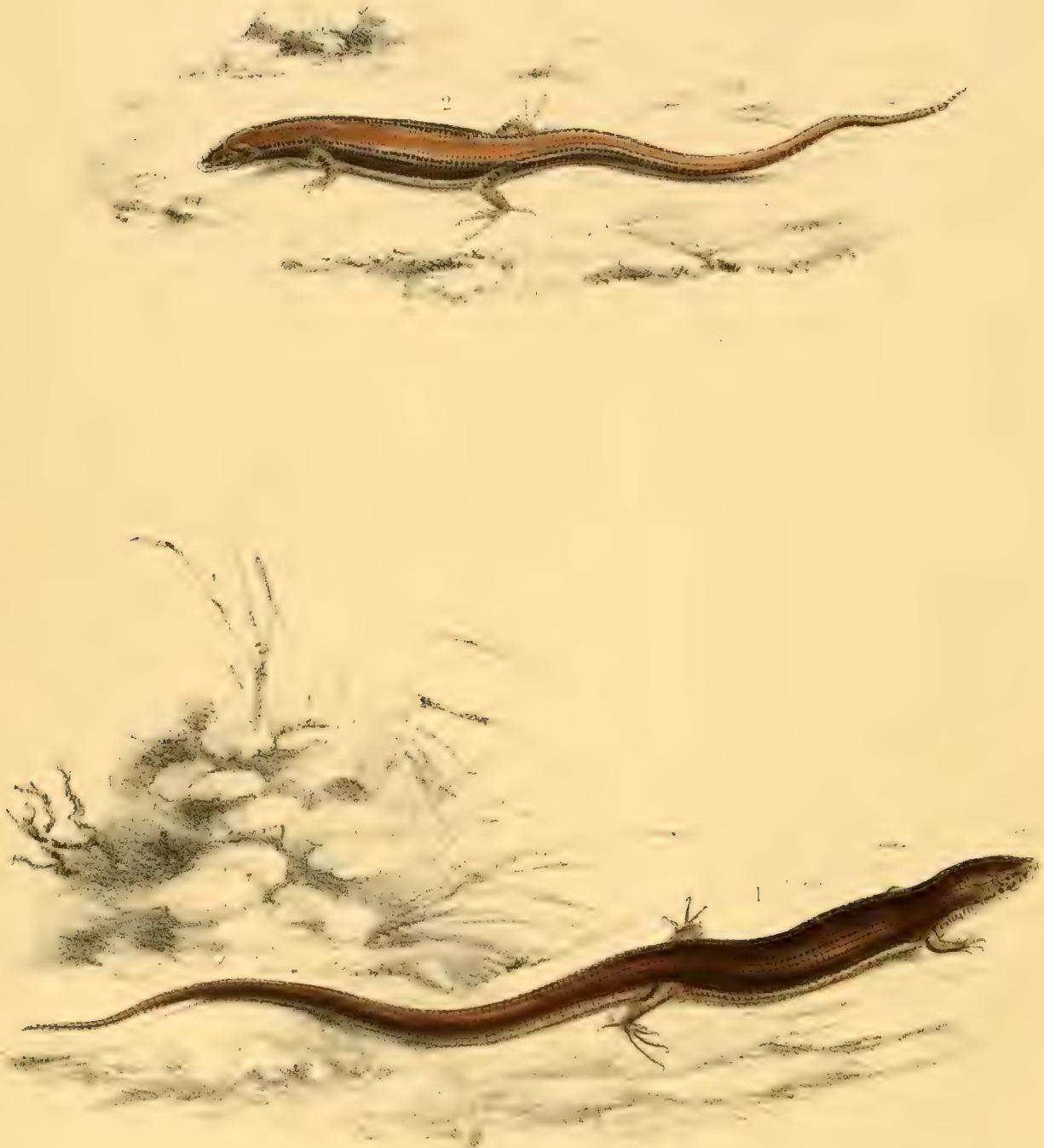
† By mistake rendered double in the Plate.

PLATYSAURUS CAPENSIS.

nostril situated towards its middle; frenal plates two, the anterior one small and irregularly shaped. Naso-rostral plate large and diamond shaped.* Frontal plate single, oblong, and four sided, the anterior considerably longer than the posterior side; fronto-parietal plates four, two anterior and two posterior, the latter with the parietal plates forming a distinct square shield which laterally is edged on each side with two narrow plates; the hinder and inner angles of posterior fronto-parietal and anterior and inner angles of parietal plates are kept apart by the intervention of a small diamond shaped plate. Palpebral plates four, externally edged with a row of narrow plates which form the edge of the eyebrow. Temples convex and coated with plates, which anteriorly and inferiorly are surrounded with small scales. Body and sides covered with very small scales, which along the middle of the back are many sided and very closely set, elsewhere they are less closely set and rather ovate. Anterior and outer surface of fore legs covered with rather large six sided scales, hinder and inner portions with small multiangular scales. The last joint covered with rather large and irregularly five or six sided scales. Outer, posterior, and inner surface of hinder legs towards body covered with small subovate scales, and their anterior surface with quadrangular ones. Toes long and slender, nails short, very crooked, and sharp pointed. Femoral pores small and eighteen in number. Space between rami of lower jaw coated with lengthened narrow scales arranged in longitudinal rows, those of the row along the mesial line largest. Scales of under surface of neck small, and transversely subovate. Gular collar rudimentary, the scales composing it very small; abdominal plates quadrangular and disposed in transverse rows, about twenty plates in each; preanal plates many sided, eight in the last row, the two middle of which are the largest. Tail towards base, above, flat, beneath two sided, elsewhere subcylindrical, its scales narrow, quadrangular, lengthened and arranged in whorls. *Meatus auditorius externus* large, subovate, opening obliquely outwards and backwards. Tongue solid and obtusely pointed; its upper surface villous and its edges towards point, thin and sharp. Length from nose to base of tail, 3 inches; length of tail, 4 inches, 8 lines.

Inhabits Great Namaqualand, and is always found on rocky precipices. When pursued, it seeks concealment under flat stones or in the crevices which intervene between the rocky masses, and, from its claws being much hooked, it is not without difficulty removed from the chinks into which it may have retreated. It lives upon small insects.

* In the figures there appears a small scale before and another behind the naso-rostral plate, but these, however, are to be viewed only as small portions of the plate accidentally separated.



1. *GLAUCONOTUS SEPTENTRIONIS*
2. *GLAUROSAURUS TIBETANUS*.
(Reptilia, Plate II.)

GERRHOSAURUS SUBTESELLATUS.—SMITH.

REPTILIA.—PLATE XLI. FIG. 1.

G. dorso flavo-brunneo, lineâ alba brunneaque tassellata in utroque latere marginato; partibus inferioribus carneis cupreo-viride-tinctis; corpore fortiter depresso; squamis lœvibus.

LONGITUDO e naso ad basin caudæ 1 unc. 11 lin.; caudæ 4 unc.

COLOUR.—Top of the head umber-brown, variegated with three deep orange coloured brown spots, one between the eyes, and the other two on the hind head. Eyebrows and lips greenish white, the former connected by a narrow white line which edges the anterior part of the head. The middle of the back dull yellowish brown, variegated towards the head with two and towards the tail with three rows of small, somewhat square, brownish red spots, very little darker than the ground colour, and only distinct in fresh specimens or in those observed in spirits. The sides of the back chequered white and liver-brown, the latter rather the predominant colour, and disposed in the form of small irregular quadrangular spots, arranged in two rows, each of which, as well as each individual spot, being parted by the intervention of a narrow streak of white. Sides of body similarly coloured as the back, only the different tints are darker. Tail above coloured like the back, but the chequered lines diminish in width and regularity as they distance its base, and almost disappear towards the tip. Throat and belly pale aurora-red tinged with coppery green, the plates towards the sides of the belly strongly clouded with brownish red, and the central portion of each of the scales of the throat also of that colour; under surface of tail greenish white or pale broccoli-brown, and variegated with small irregular spots of light brownish red, the centre of each scale being of the latter colour. Legs and toes aurora-red, freckled towards body with irregular spots of umber-brown.

FORM, &c.—Figure fusiform, the tail tapered to a point. Head, body, and base of tail depressed, and the upper aspect of the two latter slightly arched. Head small, muzzle rather lengthened, and its point obtuse and rounded. Frontal plate oblong, five-sided, the anterior side arched. Fronto-nasal plate large, and its hinder edge slightly concave; no distinct inter-fronto-

GERRHOSAURUS SUBTESELLATUS.

parietal or inter-parietal plates (Vide Plate XLII. Fig. 5.) Temporal plates six, the hindermost one the largest. *Meatus auditorius externus* edged anteriorly by a narrow projecting plate. Scales of body slightly imbricate, and arranged in transverse rows ; they are quadrangular in form, and in proportion to the size of the species are larger than in any other species of the genus yet described ; they are all quite smooth, and destitute even of the rudiments of a keel. Lateral duplicature well developed. Plates of belly quadrangular, and disposed in transverse rows, eight scales in each, their greatest width transversely. Femoral pores eight. Preanal plates three in a row, the middle one diamond-shaped. Length from nose to base of tail, 1 inch 11 lines ; length of tail, 4 inches.

So far as I know, only a very few specimens of this species have yet been obtained, and the only two I myself procured were caught among short grass in the vicinity of a low rocky knowl, in Great Namaqualand.

The uniformly smooth surface of the scales of this species distinguish it at once from the others of the genus. The small depth of the body is also another diagnostic character, and a third is the great size of the scales, when compared with the size of the Lizard.

GERRHOSAURUS SEPIFORMIS.—DUM. ET BIB.

REPTILIA.—PLATE XLI. FIG. 2.

G. dorso lateribusque lineis angustis alterne fuscis et flavo-brunneis variegato; labio superiore brunneo, flavo-albo-fasciato; corporis squamis multiliratis, caudae carinatis.

LONGITUDO e naso ad basin caudae 2 unc. 3 lin.; caudae 5 unc.

SCINCUS SEPIFORMIS, Schneid, Hist. Amp. fasc. ii. p. 191, Merr. Tent. Syst. Amp. p. 70.

COLOUR.—Back and sides variegated with from twenty to twenty-four narrow longitudinal lines, half of which are of a tint intermediate between umber and deep reddish brown, the other half between yellowish and deep reddish brown, and they vary in depth in different specimens. The dark lines are of unequal width, and the one which extends along the edge of the back on each side is invariably the narrowest, being seldom more than a simple line, from which circumstance the light coloured lines on each side of it are broader than those elsewhere. In some specimens the sides, instead of being marked with distinct lines, are dark brown sprinkled with small white spots, both irregular in regard of size and distribution. Upper parts of tail coloured like the back, only the lines are less distinct, and scarcely if at all visible towards its point, sides of tail umber-brown more or less profusely variegated with small white spots or longitudinal streaks. The lateral fold of skin, the throat, the belly, and the under surface of extremities intermediate between yellowish and greenish grey,—the scales of the former edged with brownish red. Under surface of tail intermediate between broccoli and hair-brown. Legs and toes orange-coloured brown, freely shaded or deadened with umber-brown, the hinder ones darkest. Upper lip transversely barred yellowish white and liver-brown, anterior portion of lateral fold variegated with transverse bars alternately white and light reddish brown.

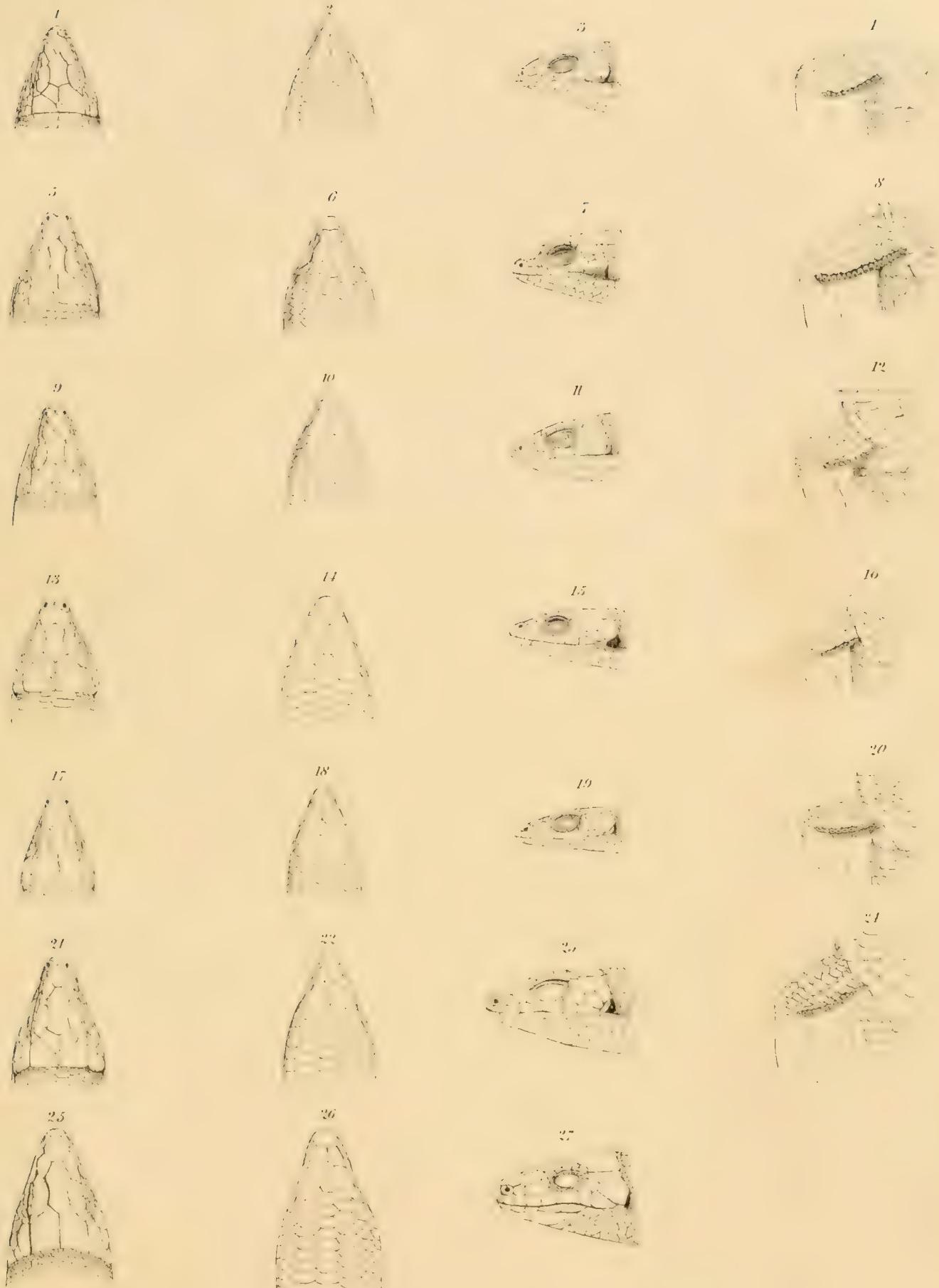
FORM, &c.—Figure fusiform, the tail very long,* and tapered to a fine point. Head small, and the muzzle slightly pointed. Body subquadrangular, as is also the tail at its base, elsewhere the latter is cylindrical. Frontal plate oblong, six-sided, the two anterior and posterior sides much shorter

* The specimen represented in the Plate had the tail unusually short.

GERRHOSAURUS SEPIFORMIS.

than the lateral ones. Fronto-nasal plate large and heart-shaped, the emargination in the hinder edge; inter fronto-parietal plate long, narrow, and subdiamond-shaped; inter parietal short and regularly diamond-shaped. Temporal plates four, the two upper the largest. *Meatus auditorius externus* subtriangular, and in front edged with a narrow projecting plate. Lateral duplicate well developed. Scales of body quadrangular, slightly imbricate, disposed in transverse rows, and each with a number of rudimentary keels or slightly elevated striae; scales of the tail in circles, and each of those of the upper and lateral parts with a strongly developed keel, which behind terminates in a prominent spine, those of the under surface with several keels, but no spines. Abdominal plates quadrangular, smooth, and arranged in transverse rows, eight in each, those of the four middle rows largest. Femoral pores 10. Preanal plates three in a row, the middle one triangular, and its apex rather blunt. Length from nose to base of tail 2 inches 3 lines; length of tail of a perfect specimen 5 inches.

Inhabits grassy flats in the Eastern districts of the Cape Colony, and when disturbed in its retreat, seeks concealment under loose stones or among decayed vegetable matter.



GERRHOSAURI.
(Reptilia. — Plate 42.)

Fig's 1,2,3,4. *Gerrhosaurus flavigularis.* — 5,6,7,8. *G. Typicus* — 9,10,11,12. *G. Bibroni.*
13,14,15,16. *G. sepiiformis.* — 17,18,19,20. *G. tessellatus.* — 21,22,23,24. *G. lineatus.*
25,26,27. *G. mitrascutatus.*



1. EREMIAS KNOXII.
2. D^o LINEO OCCELLATA.
(Reptilia. Plate. 43)

EREMIAS KNOXII.

REPTILIA.—PLATE XLIII. FIG. 1.

E. superne rufo-flava lineis longitudinalibus quatuor nigro-brunneis variegata; lineis, maculis circularibus subflavis signatis; palpebrâ inferiore squamis parvis tunicata; scutis ventralibus duodecim aut quatuordecim in ordine transversa.

LONGITUDO e nasi apice ad basin caudæ 2 unc; caudæ 3½ unc.

COLOUR.—The head superiorly, the back, the upper parts of the sides, and the upper and lateral parts of the tail intermediate, between honey and ochre-yellow:—the head variegated with small liver-brown spots, and the back and sides with four longitudinal liver-brown stripes, each of which incloses, more or less completely, a series of small round lemon-yellow spots. The two dorsal stripes commence at the occiput, and are gradually lost a little beyond the base of the tail; the others, one on each side, originate immediately behind the outer angle of the eye, and towards their commencement, consist of short longitudinal streaks, posteriorly they terminate at the base of the hinder legs. In some specimens there exists in addition to these lines, another on each side, but without any light coloured spots; these where they occur, extend simply from the fore to the hinder legs. The extremities are light yellowish brown, with a greenish tinge, and are superiorly and posteriorly variegated with small yellow spots, surrounded by narrow liver-brown rings. Sides of head yellowish brown, finely speckled with umber-brown. The under parts of neck, body, extremities, and tail, yellowish white; eyes deep orange red; claws brownish red.

FORM, &c.—Body rather robust; tail moderately long and very delicate at the point. Head quadrangular and tapered to the snout, which is obtusely pointed. Plates of the upper surface of the head uneven and rather rugose; nasal plates contiguous, naso-rostral plate anteriorly arched, posteriorly prolonged backwards between fronto-nasal plates, the latter separated from each other by the intervention of an oblong quadrangular plate; frontal plate widest anteriorly and grooved along the middle, the edge on each side

EREMIAS KNOXII.

of groove elevated; interparietal plates rhomboidal, the two anterior sides much the shortest; parietal plates, five sided; palpebral plates, two, with an irregular scale immediately in front of them, behind they are edged with a congeries of small scales, partly quadrangular, partly circular; freno-nasal very small and quadrangular; freno-ocular much larger, quadrangular, and widest behind; ante-ocular plates two, the lowermost very small, the uppermost ovate, and placed obliquely; plates of upper lip nine, no part of it formed by the suborbital plate; those of lower lip seven, all very narrow; *meatus auditorius externus* narrow, vertical, and with three small scales projecting backwards from its anterior edge. Scales of back and upper parts of sides small, subquadrangular, carinated, imbricate, and disposed in transverse rows, each of which present a slight angle at the middle of the back; scales of lower parts of sides smooth; scales of back and sides of tail carinated, of under surface plain; preanal scales seven, one forming the centre, and six surrounding it in the form of a ring. The scales of the lower surface of the neck are small, flat, somewhat ovate, and the largest are towards the breast. Antepectoral fold formed of seven scales, the middle one the largest; ventral plates in transverse rows, twelve or fourteen in each, some small scales between the last row and the preanal plates. Scales of fore legs anteriorly large, subtriangular, and imbricate, externally small, imbricate, and keeled; under eyelids closely coated with minute granular scales. Femoral pores ten or twelve, not very distinct. When the anterior extremities are applied along the sides of the neck, the longest toe reaches to the nostril, and when the hinder ones are applied along the sides, the longest toe reaches to the opening of the ear.

Length from point of nose to anus, 2 inches; length of tail, $3\frac{1}{2}$ inches.

Inhabits arid Karoo county, and is very common within the boundaries of the Cape Colony.

EREMIAS LINEO-OCELLATA.—SMITH.

REPTILIA.—PLATE XLIII. FIG. 2.

E. superne rubro-aurantia lineis longitudinalibus quatuor nigro-brunneis notata; lineis, maculis circularibus albis signatis; portione ovale palpebræ inferioris semipellucidâ; scutis ventralibus duodecim in ordine transversâ.

LONGITUDINE nasi apicè ad basin caudæ 2 unc.; caudæ 4 unc.

COLOUR.—The head, superiorly, the back, and the upper parts of the sides, reddish orange, variegated with four longitudinal liver-brown lines, in each of which is enclosed, more or less completely, a series or row of small white spots. The two dorsal lines are generally the darkest and best defined; the lateral ones in some individuals are continuous, but in the majority consist only of a congeries of irregular spots or dark freckles, which form a dark mottled line in which the light spots are more or less imbedded. The two middle lines commence close to the hinder angle of the eyes, and terminate a little beyond the base of the tail, the lower arises from the angle of the mouth, passes across the upper extremity of the *meatus auditorius externus*, and terminates at the base of the hinder extremity; below this dark line is margined with a narrow one of a clear white colour. The head above is sparingly dotted with liver-brown; the legs superiorly are of the same colour as the back, and freckled with liver-brown; the under parts of the neck, body, extremities, and tail, yellowish white. Tail above, light reddish orange, with a few liver-brown dots towards its base disposed in two rows.

FORM, &c.—Body moderately robust, tail slender and finely tapered to the point. Head, anteriorly, tapered, the snout slightly obtuse; the plates of upper surface of head uneven and slightly rugose; nasal plates small and contiguous, naso-rostral plate somewhat rhomboidal or subtriangular; frontonasal five-sided, inner sides in contact; frontal plate club-shaped and furrowed longitudinally along its centre from nearly the base to the apex; frontoparietal plates five-sided and contiguous; interparietal plate subrhomboidal, the two anterior sides short, and the greatest width of the plate is towards

EREMIAS LINEO-OCELLATA.

its anterior extremity; parietal plates somewhat quadrangular; palpebral plates two, margined anteriorly, externally, and posteriorly with small granular scales; lower eyelids with an oval transparent disc, surrounded by small granular scales; freno-nasal plate small, somewhat five-sided; freno-ocular plate large and four-sided, the posterior side longer than the anterior; anti-ocular scales sublinear, keeled, and oblique in relation to the eye. The subocular plate forms part of the upper lip, and the rest of it is composed of seven scales, four before the plate just named, and three behind it; scales of lower lip six or seven, rather narrow. The external opening of the ear vertical and subovate, without any distinctly projecting scales. The scales of the body and sides superiorly small, imbricate, somewhat triangular, carinated, and disposed in transverse rows. Those of the sides towards belly plain. Scales of the upper and lateral parts of the tail carinated, of the under parts, smooth. Scales of the under surface of the neck, towards the chin, small, ovate, and arranged in oblique rows; towards the breast, small, somewhat triangular, and slightly imbricate. Antipectoral fold edged with thirteen somewhat quadrangular scales; plates on chest and belly subquadrangular, and disposed in transverse rows, about twelve in each row, the rows about thirty-three in number; preanal plates in four rows, the plates of the hindermost row the largest. Scales of upper and outer surface of fore-legs triangular, imbricate, and keeled, below, rhomboidal and plain; front of legs above toes, covered with rather large plates. Hinder legs, superiorly, coated with small triangular keeled scales, inferiorly, towards toes, with large plates. Femoral pores, thirteen. The longest toe of the fore-feet, when they are placed along the sides of the neck, reaches to the anterior angle of the eye; the longest of the hinder ones, when applied along the sides, approaches to within a line of the external opening of the ear.

Length from nose to anus, 2 inches; length of tail, 4 inches.

This is not quite so common as the species last described, yet is met with in several parts of the colony. In various respects it resembles *Eremias Knoxii*, but is without difficulty to be distinguished from it by having a semitransparent disc in the lower eyelid, and also by its preanal plates being very differently arranged.



1 EFTIMIAS UNDATA
2 EFTIMIAS NAMAQUENSIS
(Plate 44)

EREMIAS UNDATA.—DUM ET BIB.

REPTILIA.—PLATE XLIV. FIG. 1.

E. supernè rufo-flava, lineis quatuor longitudinalibus variegata, subtus flavo-alba; portione ovale palpebræ inferioris subpellucidâ; scutis ventralibus duodecim in ordine transversâ.

LONGITUDO e nasi apice ad basin caudæ 2 unc.; caudæ 3 unc.

COLOUR.—The back and upper parts of sides intermediate between pale buff-orange and ochre-yellow; the upper surface of the head freely variegated with small liver-brown spots, and the back with four longitudinal liver-brown bands, one of the latter proceeds from the hinder extremity of each eyebrow, and on the back, immediately between the hinder legs, they unite, and either terminate at once or extend, as one, for a few lines along the upper surface of the tail; the other stripes commence one at each angle of the mouth, pass along the side of the neck, immediately over the *meatus auditorius externus*, and terminate at the base of the hinder leg. Towards the head these lines are continuous, and variegated with small spots of the same colour as the back, posteriorly, they are serrated or otherwise irregular. The extremities, superiorly, are nearly of the same colour as the back, each variegated with an interrupted zigzag or serrated line along its hinder aspect, in which lines are observed several cream-yellow spots. Tail, superiorly, the same colour as the back, or wine-yellow, and there are indications of a row of small dark spots along its centre. The lower portions of the sides cream-yellow; the under surface of the neck, body, extremities, and tail, yellowish white. Toes and claws, light sienna-yellow.

FORM, &c.—Body, moderately robust; tail, slender, and tapered to a fine point; scales of the upper and lateral parts of neck, and of the back and sides, small, subovate, closely set, and slightly convex; scales of tail, quadrangular, and arranged in circles, those of the upper and lateral parts strongly carinated. Head, small; the snout, tapered, and almost pointed; nasal, fronto-nasal, and fronto-parietal plates, each contiguous with its fellow; naso-rostral plate, large, subtriangular, and from its base a slender point projects between the nasal plates; frontal plate narrow posteriorly, rather

EREMIAS UNDATA.

broad anteriorly, and somewhat club-shaped; interparietal plate rounded anteriorly, truncated posteriorly, and much wider before than behind; palpebral plates two, sometimes three, the middle one then rudimentary, the shield formed by the whole is edged anteriorly, posteriorly, and externally, with a band of small subgranular scales; occipital plate small, and of an irregular shape; frenal plate, quadrangular; anti-ocular plate large, quadrangular, and deeper behind than in front; upper labial plates six; the hindermost irregular, lengthened, and forms a part of the angle of the mouth. Lower eyelid with two transparent plates, forming a disc near its centre, the hindermost smallest, elsewhere it is coated with small granular scales. Opening to ear, vertical, subovate, and, anteriorly, margined with four or five small projecting scales; antepectoral fold distinct, its hinder edge throughout free and margined with about fourteen small plates. Breast and belly with oblique rows of subquadrangular plates, from ten to twelve in each row; guttural plates small, ovate, and disposed in oblique rows; preanal plates in four transverse rows, five or six in the last and two in the first row. Fore legs, anteriorly, superiorly, and posteriorly, coated with irregularly triangular imbricate scales, a few near the toes carinated; inferiorly with small granular ones; hinder legs superiorly and posteriorly covered with small granular scales; anteriorly and inferiorly with rather large, subtriangular, imbricate scales; the tarsi superiorly also with small similarly shaped scales, all of which are strongly keeled. Toes, very slender; claws, slightly curved and pointed. The longest toe, when the fore legs are placed along the side of the head, reaches exactly to the point of the nose, and the longest of the hinder feet, when the legs are placed along the side, touches the angle of the mouth. Femoral pores about thirteen.

Length from point of nose to anus, 2 inches; length of tail, 3 inches.

Inhabits the arid sandy flats between Cape Town and Little Namaqualand.

EREMIAS NAMAQUENSIS.—DUM ET BIB.

REPTILIA.—PLATE XLIV. FIG. 2.

E. superne lineis nigro-brunneis quinque et rubro-aurantiis quatuor notata; capite parvo antice gracile; squamis ventralibus in linea transversa duodecim; caudâ gracile longissimâ.

LONGITUDU^D corporis que 2 unc.; caudæ 5½ unc.

COLOUR.—Back and upper parts of sides marked with nine narrow longitudinal lines, five of which are liver-brown, and the other four light reddish orange. Of the five, one extends along the middle of the back, from the hind head to the base of the tail, is bifid anteriorly, and has usually, within the fork, a short rudimentary streak of the same colour, from two to three lines in length; the two lines on each side commence near to the hinder angle of the eye, the lowermost, the widest, crosses the external ear, and both terminate at the commencement of the tail. In adult specimens, generally, these lines are finely freckled with light reddish orange. The light lines are narrower than the dark ones, which lie immediately on each side of them. Below the black lines the sides are an uniform cream-yellow; the extremities superiorly and posteriorly clove-brown, speckled with cream-yellow; head, superiorly, clove-brown, with a coppery gloss; lips cream-yellow; tail, above, light reddish orange, or wine-yellow. The under parts of the neck, body, extremities, and tail, yellowish white.

In young specimens the dark lines are without variegations, of a very deep colour, and contrast strongly with the light ones, which are nearly white.

FORM, &c.—Figure slender; tail very long, and extremely delicate towards the point; head, posteriorly, four-sided; anteriorly, slender and subcylindrical; the snout slightly obtuse; nasal plates contiguous, naso-rostral six-sided, anteriorly pointed; fronto-nasal six-sided, and separated from each other by a small five-sided plate, palpebral plates two, margined anteriorly, externally and posteriorly, with small granular scales, interparietal plate five-sided, broadest anteriorly, occipital plate four-sided, the hinder side the longest, and slightly arched; superior labial plates of left side, three in front of

EREMIAS NAMAQUENSIS.

the suborbital plate, which forms a portion of the lip, and three behind it ; on the right side there are four in front of suborbital plate, and two behind it ; scales of lower lip six ; freno-nasal plate quadrangular, anterior and posterior sides nearly of equal length ; freno-ocular plates four-sided, the hinder side much the longest ; anti-ocular plates small, the uppermost quadrangular, the lowermost linear ; ear opening vertical, slightly ovoid, and both edges even. Scales of back and upper parts of sides minute, ovate, granular, and disposed in rather waved transverse lines ; the scales of the lower parts of the sides rather larger, flat, and subtriangular ; scales of under surface of neck small, ovate, and arranged in transverse bands, those towards chin slightly arched or angular, those towards breast oblique ; ante-pectoral fold margined behind with eight subquadrangular scales, and between these and the scales of the neck, already described, there are three or four transverse rows of subquadrangular scales, larger than those in front of them. The plates of the first pectoral row are four-sided, long, and transversely narrow ; the rest are, like those of the belly, much smaller, subquadrangular, and disposed in transverse rows. The plates about half way between anterior and posterior extremities, generally twelve in each row ; preanal plates in three rows, those of the two hinder rows largest, four in the last, and two in the one before it, also some smaller ones on each side of both, and also behind the last. The fore-legs, inferiorly, towards toes, coated with a longitudinal row of small plates ; anteriorly, with a row of a larger size ; toes slender, the third and fourth equal and longest ; the hinder legs inferiorly towards toes, with a longitudinal row of large plates ; thighs anteriorly coated with plates ; scales of upper and lateral parts of tail carinated, of under parts smooth. Femoral pores, fourteen. The *point* of the fourth toe, when the fore-legs are carried along the sides of the neck, reaches the anterior angle of the eye, and the point of the fourth toe of the hinder extremities, when they are stretched along the sides, reaches the angle of the mouth.

Length from point of nose to anus, 2 inches ; length of tail, $5\frac{1}{2}$ inches.

The only specimens of this lizard which I have seen were obtained in Great Namaqualand



LIZARD OF CALIFORNIA
LIZARD CALIFONIA
(Reptilia - Plate. 45)

EREMIAS BURCHELLII.—DUM. ET BIB.

REPTILIA.—PLATE XLV. FIG. 1.

E. superne flavo-brunnea, lineis longitudinalibus brunneis, irregularibus aut interruptis sex, notatis; scutis nasalibus contiguis; scuto parvo quadrangulari inter scuta fronto-nasalia; dorsi squamis parvis subcircularibus; scutis ventralibus in ordine transverso quatuordecim; poris femoralibus duodecim.

LONGITUDO e nasi apice ad anum 2 unc. 3 lin; caudæ 4 unc. 9 lin.

COLOUR.—The colour of the upper and lateral parts of the head, of the sides of the neck, of the back, and of the upper surface of the tail, yellowish brown, the colour of the tail lightest towards the point. The upper surface of the head is variegated with small umber-brown dots, and the back and sides with six longitudinal liver-brown stripes, not equally distinct in every specimen, yet, nevertheless, their course, with a little care, is easily to be traced in all, though, on a slight examination, an assemblage only of short narrow stripes, varying from half a line to a line in length, appear to exist on the back and upper parts of the sides. The two middle stripes, which extend along the back from the hindhead to the base of the tail, are very slender, and generally consist of a succession of short lines; the uppermost lateral stripe running along the sides is strongly marked, and variegated by having imbedded in it a line of white or yellowish brown spots; each of these lines is continued for a short distance along the side of the tail, getting fainter and fainter as it proceeds; the lowermost line of the side is sometimes more distinct than the one above it, and separated from it by a stripe of rusty white; at other times, it is not separated by any light colour, but, instead of being liver-brown, is brownish red, and speckled with small yellowish brown spots; when it is a distinct liver-brown stripe it is marked, like the line above it, with white spots. The outer surface of extremities brownish red, freckled with small yellowish brown spots; the upper surface of the tail towards the base variegated with a row of small quadrangular liver-brown spots, largest near their commencement. The under surface of the head, the body, the tail, and the inner surface of the extremities, yellowish white. Eyes, dark chestnut-brown.

FORM, &c.—Body, moderately robust, slightly depressed, with the sides bulging; head, viewed above, triangular, the nose slightly obtuse; sides of head, in front of eyes, nearly perpendicular; temples convex and slightly projecting; distance between eye and nose nearly as great as between eye and ear opening. Nasal plates contiguous; naso-rostral rhomboidal, the an-

EREMIAS BURCHELLII.

terior angle acute, the others slightly truncated; fronto-nasal separated from each other by the intervention of a small subquadangular plate; frontal lengthened, and broadest at its anterior extremity, its margin anteriorly truncated; fronto-parietal plates contiguous, and irregularly four-sided; inter-parietal large, four-sided, anteriorly triangular, posteriorly truncated. Occipital plate, small and subovate; palpebral plates, two, forming an oval disc, which exteriorly, anteriorly, and posteriorly, is edged with small granular scales; freno-nasal, small and quadrangular; freno-ocular, larger, somewhat triangular, the anterior angle slightly truncated; ante-ocular scales very small, the anteriormost the largest; plates of upper lip, in front of large infra-orbital plate, four, posterior to it three; of lower lip, seven or eight, exclusive of the chin plate, *vide* Plate XLVIII. Figs. 4 and 4a. Ear-opening large, vertically subovate, its edges are smooth, and two scales larger than the others are observed anteriorly, close to its upper extremity. Scales of back and upper parts of sides small, nearly circular, and placed like stones in a pavement; scales of under surface of neck, small, subovate, or subcircular, flat and slightly imbricate; plates edging, ante-pectoral fold quadrangular, and about ten in number. The first and second rows of pectoral plates are oblong and quadrangular, the remainder smaller, less lengthened, and not disposed in such regular rows; plates of belly, in rows which extend almost directly across, fourteen plates in each of the longest rows; pre-anal plates in several rows, five plates in each of the two middle ones; femoral pores, twelve or thirteen. Scales of the upper and lateral parts of the tail carinated, of the under parts smooth, quadrangular, and those towards its base narrowest posteriorly; scales of fore legs, towards body, small, smooth, and imbricate, anteriorly, towards toes, large and quadrangular; scales of hinder legs small, and somewhat circular, and, anteriorly towards body, and inferiorly towards toes, a covering of rather large plates, which, in the first-mentioned position, are disposed in a regular and longitudinal row. Under eyelid coated externally with a number of small semi-pellucid plates. When the anterior extremities are extended along the sides of the neck, the point of the longest toe reaches exactly to the point of the nose, and when the hinder ones are applied along the sides, the point of the longest toe reaches to the base of the fore leg.

Length from the point of the nose to the vent 2 inches 3 lines, length of the tail 4 inches 3 lines.

Inhabits the Karoo flats, on the south-west coast of Africa, particularly Little Namaqualand, towards the Great Orange River. It is wild, extremely watchful, and moves from place to place with great rapidity.

EREMIAS CAPENSIS.—DUM. ET BIB.

REPTILIA.—PLATE XLV. FIG. 2.

E. superne subgrisea, lineis quinque longitudinalibus, nigro-brunneis variegatis, linea media antice furcata; scutis nasalibus disjunctis; scuto parvo quadranguli inter scuta fronto-nasalia; dorsi squamis parvis subcircularibus in ordinibus transversis dispositis, et inter ordines squamis minutissimis; scutis ventralibus ordine transverso sexdecim; poris femoralibus novem, aliquando undecim.

LONGITUDINE nasi apice ad anum 2 unc. 3 lin.; caudae 4 unc. 3 lin.

LACERTA CAPENSIS, *Smith*, Mag. of Zool. and Bot. (New Series) vol. ii. p. 93.

COLOUR.—The colour of the upper and lateral parts of the head, and of the outer surface of the extremities, a brownish purple-red, the latter parts variegated with a few scattered, small, whitish spots. The back and the upper parts of the sides bluish grey variegated with five more or less defined longitudinal liver-brown lines, which terminate on the base of the tail; one of these lines, the narrowest, extends along the middle of the back, is forked towards the head, and posteriorly consists in general of only a series of fine short streaks, the others, two on each side, are rather broader, and consist of irregularly shaped spots, in some specimens like the letter X, and more or less connected. The upper surface of the tail pale yellowish grey, towards the base tinted with asparagus-green. The under surface of the head, the body, and the tail, and the inner surfaces of the extremities, yellowish white. Toes and claws light yellowish brown, with a semi-transparent appearance. Eyes dark chestnut-brown.

FORM, &c.—Body moderately robust, sides rather bulging; head lengthened, posteriorly rather broad and four sided, anteriorly narrow and tapered; nose slightly obtuse and rounded. Temples slightly protuberant. Nasal plates separated from each other by the intervention of the anterior and lengthened angle of the rhomboidal naso-rostral plate; fronto-nasal plates apart, with a small subquadrangular plate connecting them; frontal plate lengthened, club-shaped, and its anterior and posterior edges arched; fronto-parietal plates contiguous; interparietal rhomboidal, broadest anteriorly, and with a small granular elevation

EREMIAS CAPENSIS.

on its surface near its centre; occipital plate hemispherical, the convexity forwards; parietal plates indistinctly five sided, the sides very unequal in length, and the two forming the outline anteriorly meet in front at an acute angle; palpebral plates in some specimens almost completely surrounded with small granular scales; freno-nasal plate oblong and quadrangular; freno-ocular irregularly triangular, the anterior angle truncated; lower eyelid externally covered with small semi-pellucid plates, *vide* Plate XLVIII. Figs. 7 and 7 α ; upper lip anterior to large suborbital plate with seven plates, behind it five, small and scale-like; of lower lip eight or nine besides the chin plate. Ear-opening large, vertically subovate, and its edges even and covered with small granular scales. Scales of back and upper part of sides small, subcircular, regularly arranged in transverse rows, and the rows separated from each other by the intervention of minute granular scales; the under surface of the neck coated with small flat subovate scales, imbricate, and arranged in irregular transverse rows; hinder edge of antepectoral fold formed of eight quadrangular plates, the two middle ones the largest; pectoral and ventral plates quadrangular in transverse rows, sixteen plates in the longest ventral row; preanal plates in several transverse rows, two in the hindermost row, and about five in each of the two in front of it; femoral pores nine to eleven, their openings small, directed outwards and backwards; scales of upper and lateral parts of tail carinated; plates of under parts of tail short and quadrangular. The fore legs towards body covered anteriorly with a row of large plates, elsewhere with small subtriangular flat imbricate scales; hinder legs anteriorly towards body, and inferiorly towards toes, with plates, elsewhere with small scales. When the anterior extremities are extended along the side of the neck, the longest toe reaches to about a line beyond the point of the nose; and when the hinder are laid along the sides, the longest toe reaches exactly to the opening of the ear.

Length from point of nose to vent 2 inches 3 lines; length of the tail 4 inches 9 lines.

Inhabits the arid Karoo flats within the Cape Colony, as well as those of the districts immediately beyond it. It is very agile, extremely watchful, and, when frightened, conceals itself under loose stones, decayed wood, or any other material beneath which it can creep. This species is readily to be distinguished from *Eremias Burchellii*, by its having the interstices between the rows of the larger scales of the back studded with minute granular scales; by the nasal plates having the anterior extremity of the naso-rostral introduced between them, and by the palpebral plates being, to a greater extent, encircled by small granular scales. The plates of the lower eyelid are also much less numerous, and, instead of being irregularly scattered, are arranged in two longitudinal rows.



Fig. 1.
Lacerta agilis.
M. A. B. 1870.

EREMIAS LATICEPS.—SMITH.

REPTILIA.—PLATE XLVI. FIG. 1.

E. superne flavo-brunnea, lineis quinque, longitudinalibus, subflavis, variegatis, linea mediâ antice bifurcata; scutis nasalibus disjunctis; scutis ventralibus in ordine transverso sexdecim; poris femoralibus tredecim.

LONGITUDINE nasi apice ad annum 2 unc.; caudae 3 unc. 3 lin.

COLOUR.—The upper and lateral surfaces of the head intermediate between reddish orange and yellowish brown. The ground colour of the back, the sides of the body, and the outer surface of the extremities intermediate between brownish red and chestnut-brown, and variegated with light yellowish brown, either as longitudinal stripes or small spots. The stripes, when they exist, are three distinct, and two indistinct, the latter low on the sides, and extending between the fore and hinder legs, the others are, one along the centre of the back, and one towards the middle of each side. These three commence close to the hindhead, and terminate a little beyond the origin of the tail; the middle stripe is forked towards its anterior extremity, and between its limbs there exists a short stripe of the colour of the more lengthened ones. The bands of spots exist only on the body towards the head, and are one between every two of the longitudinal stripes, the spots are very small, and not disposed in any regular order. The outer surface of each extremity is also variegated with a band of spots of a similar character. The belly, the inner surface of the extremities, and the under surfaces of the head and the tail, yellowish white; the upper surface of the tail and the feet yellowish brown.

FORM, &c.—Figure rather slender; tail moderately long and very slender at the point. Head rather depressed, broad posteriorly, narrow and tapered in front of the eyes; the snout rather short; supra-orbital space prominent and convex; sides of the head anteriorly nearly vertical, posteriorly slightly convex; ear-opening narrow and vertically subovate; *membrana tympani* close to orifice; nasal plates separated by the intervention of the anterior portion of the naso-rostral plate, the latter rather large, nearly pointed anteriorly, broad and arched posteriorly; fronto-nasal separated from each other by a small quadrangular plate; frontal plate long and broadest anteriorly, where it is of a triangular shape; fronto-parietals contiguous; inter-parietal large and somewhat rhomboidal; occipital narrow, anteriorly broad, posteriorly arched; palpebral plates rather small and margined anteriorly, posteriorly, and externally with small granular scales. Plates of upper lip, in front of large suborbital plate five, behind it four; plates of lower lip seven; freno-nasal plate small, quadrangular, rather longer than deep; freno-ocular plate large and subtriangular; anteocular plates two, the anteriormost much the

EREMIAS LATICEPS.

largest but nevertheless small. Vide Plate XLVIII. figs. 3 and 3 a. Scales of the back and sides small, subrhomboidal, and the centre of each slightly elevated, they are disposed in oblique transverse bands, and are slightly imbricated; scales of the under surface of the neck disposed in transverse angular lines; they are imbricate, irregularly quadrangular, and flat towards the antepectoral fold, the largest, posteriorly lengthened into short points; the antepectoral fold edged posteriorly with twelve small squarish scales. The pectoral plates of the first row longer and narrower than those which succeed it; the ventral plates in transverse rows, about sixteen or eighteen in each; the pectoral and ventral rows together thirty. Femoral pores thirteen, the innermost of the one side nearly in contact with that of the other, the opening of each directed obliquely outwards and backwards. Pre-anal plates numerous, and disposed in six rows, the hinder plates largest. Scales of the upper and lateral parts of tail keeled, of the lower parts smooth; the hinder edge of each scale narrower than the anterior edge. Scales of the fore-legs partly small, flat, and imbricate, partly large, the largest anteriorly, in a longitudinal row, extending to the toes. The scales of the hinder legs, posteriorly and externally, small, somewhat ovate and subimbricate; below larger, triangular and imbricate, a row of large shield-like plates in front; the soles of the feet rough from small granular scales; toes below with narrow, transverse, convex plates. In the fore-feet, the middle toe and the one external to it longest and nearly equal, the anterior one considerably the shortest, the remaining two nearly of equal length. Two of the toes of each hinder foot very long; a small tubercle at base of hinder toe, which is considerably removed from the other four. The longest toe of the fore-foot, when the leg, &c. is placed along the side of the neck, reaches to the anterior angle of the eye; the longest of the hinder foot, when the leg is placed along the side, nearly to the opening of the ear.

Length from the point of the nose to the anus 2 unc., length of the tail 3 unc. 3 lin.

The only three specimens of this species which I possess, were obtained towards the mouth of the Orange River. At first sight this lizard might be considered as an example of *Eremias Namaquensis*, but when closely examined the points of difference are very evident. In *E. Namaquensis* the lower eyelid externally is coated with rather large plates, arranged in two rows, in *E. laticeps* with numerous small scales; in the former the nasal plates are contiguous, in the latter they are rather widely separated; in *E. Namaquensis* the scales of the body are more lengthened, of an ovate form, separated from each other, and with minute scales scattered between them; in *E. laticeps* they are imbricate, subrhomboidal, and without the small intermediate scales. Besides these differences, many others are to be discovered on close examination.

The only other species of the genus with which it may be confounded is *E. lugubris*, when that species exhibits little if any of the black colour; but it may at once be distinguished from it by having, in each ventral row, sixteen or eighteen instead of eight plates, as is the case in *E. lugubris*.

EREMIAS LUGUBRIS.—DUM. ET BIB.

REPTILIA.—PLATE XLVI. FIG. 2.

E. superne nigro brunnea, lineis flavis continuis interruptive tribus variegatis; scutis nasalibus contiguis; scutis magnis suprā oculos squamis parvis granulosis circumdati; scutis ventralibus in ordine transverso sex; poris femoralibus sexdecim.

LONGITUDUDE nasi apice ad annum 2 unc.; caudæ 5 unc.

LACERTA LUGUBRIS, *Smith*, Mag. of Zool. and Bot. (New Series) vol. ii. p. 93.

COLOUR.—The upper surface of the head yellowish brown shaded with brownish red, the sides cream-yellow. The back and sides of the body liver-brown, variegated with longitudinal stripes and spots of gamboge-yellow. The stripes, three or five in number, commence at the posterior part of the head, and three of them extend some distance beyond the origin of the tail; the remaining two, which are generally very indistinct, exist one on each side near to the abdominal plates, and are only visible between the anterior and posterior extremities. The spots, near to the head, are disposed in the form of bands, one between each two longitudinal stripes. Between the ear and the base of each anterior extremity, a waved yellow line exists, and a similar one extends between the eye and the hindhead, its termination being immediately over the commencement of the upper line of the side. The outer surface of the extremities brownish red, clouded with liver-brown, and finely freckled with lemon-yellow. The under surface of the head, the body, the tail, and the inner surface of the extremities, yellowish white; upper surface of tail, yellowish brown. Eyes, deep chestnut-brown.

The above are the colours of the specimen figured, but it may not fall to the lot of another person to obtain one exactly like it. I am not acquainted with any lizard which varies so greatly in regard of colour; some specimens are obtained almost entirely black, with three yellow lines, others with the lines broken into linear spots, and others again with the sides and back, yellowish brown, variegated with lines either yellow or light buff-orange.

FORM, &c.—Body moderately robust, and subcylindrical, tail much lengthened, and very slender towards and at the point; head somewhat four-sided, only slightly depressed, the sides posteriorly slightly convex; nose narrow and rounded. Nasal plates contiguous; naso-rostral somewhat rhomboidal, and more pointed behind than before; fronto-nasal contiguous; frontal long, broadest anteriorly, and arched where it is in contact with the fronto-nasal plates; fronto-parietal, rather small, rhomboidal, and with a granule on its

EREMIAS LUGUBRIS.

centre ; no occipital plate ; parietal plates large, irregularly four-sided, and in contact behind the fronto-parietal. Palpebral plates form a large oval disc, which is surrounded entirely with small granular scales ; freno-rostral plate small and quadrangular ; freno-ocular large, and irregularly four-sided, with a small quadrangular one between it and super-orbital plates ; ante-ocular scales narrow and indistinct ; the central portion of the lower eyelid formed of small semi-pellucid plates ; plates of upper lip, anterior to infra-orbital plate, five ; behind two rather large, and somewhat irregular in shape ; scales of lower lip, six or seven, *vide* Plate XLVIII. Figs. 5 and 5 a. Opening of ear rather large and vertically ovate ; *membrana tympani*, a little below the surface. Scales of the back and lower parts of the sides, small, inclined to circular, placed close to each other like the stones of a pavement, and disposed in regular transverse rows ; scales of under surface of neck anteriorly small, oblong, and subovate, posteriorly somewhat triangular and imbricate ; ante-pectoral fold formed of eight irregular shaped scales, the two middle ones the largest. The first and second row of pectoral plates, quadrangular and lengthened, the others smaller, somewhat triangular, and not arranged in very regular transverse rows ; plates of belly, quadrangular, and disposed in transverse rows, each consisting of six plates ; pre-anal plates, towards edge of vent, very small, more in front considerably larger, and irregularly shaped. Femoral pores, sixteen. Scales of the upper and lateral parts of the tail carinated ; plates of the under surface, quadrangular and smooth. Fore legs towards toes, anteriorly, covered with large plates, elsewhere, with small, subtriangular, imbricate, scales ; toes and claws strongly compressed. Hinder legs, anteriorly and inferiorly, covered with plates, posteriorly with minute granular scales, and superiorly with rather small subtriangular ones. When the fore leg is placed along the side of the neck, the longest toe reaches to about the extremity of the nose, and when the hinder is directed parallel to the side, the longest toe reaches nearly to the hinder angle of the eye.

Length from the nose to the vent 2 inches, of the tail 5 inches.

Inhabits the arid districts immediately beyond the northern boundary of the Colony, and is often found on level stony surfaces devoid of soil. In these situations it may be seen during the day enjoying the heat of the sun, and occasionally darting upon insects, which form its food.

The having only six longitudinal rows of ventral scales prevents its being confounded with any of the yet known species. It differs also from all in having the palpebral plates forming the disc entirely encircled by small granular scales ; the species nearest it, in this respect, is *Eremias capensis*, in which a distinct interruption is to be observed at the inner and hinder portion of the disc.

1.



2.



3.



1. EREMIAS ANNULIFERA. 2. EREMIAS PULCHRA.
3. EREMIAS FORMOSA.
(Reptilia . Plate 47.)

EREMIAS ANNULIFERA.—SMITH.

REPTILIA.—PLATE XLVII. FIG. 1.

E. superne viridi-grisea, dorso seriebus quatuor macularum aut annulorum nigro-brunneorum variegatis; dorso squamis parvis quadrangularibus in lineis transversis dispositis; scutis ventralibus in ordine transverso decim; poris femoralibus quatuordecim.

LONGITUDUDE nasi apice ad anum 1 unc. 9 lin.; caudæ 3 unc. 6 lin.

COLOUR.—The upper parts of the head, the back, the sides, and the extremities, intermediate between bluish grey and greenish grey, the back being variegated with four rows of small, somewhat circular, liver-brown spots. Some of the spots of the lowermost row of each side have their centre white, or, in other words, they resemble dark rings, and some of those of the upper rows have a clear white spot immediately under their lower edge. Tail superiorly intermediate between bluish grey and oil-green. The under surface of the neck, the belly, and the under parts of the tail pale greenish grey.

FORM, &c.—Figure delicate. Tail long, slender, and very delicate towards the point. Head small and rather narrow, its sides, anterior to eyes, vertical; nose narrow and slightly rounded. Nasal plates contiguous; naso-rostral large and sub-rhomoidal, the angles rounded; fronto-nasal contiguous, the sides, where they join, short; frontal plate rather short, narrow behind, widened before, its anterior edge semicircular; fronto-parietal plates narrow, six-sided, and with an indistinct angle about midway between the anterior and posterior extremities; inter-parietal plate large, rhomboidal; parietal plates large and subovate; occipital plate small, and situated close to the hinder extremity of the inter-parietal plate. Palpebral plates transversely ovate, and almost completely surrounded with small granular scales, only a few wanting at the inner extremity of the posterior plate (Vide Plate XLVIII. figs. 14 and 14 a.) Nostril prominent, each formed of three scales; freno-nasal plate small, somewhat quadrangular; freno-ocular large, somewhat triangular, and truncated anteriorly; anteocular plates small. Scales of upper lip, anterior to

EREMIAS ANNULIFERA.

large infra-orbital plate, five, behind it four, all small and unlike those in front; plates of lower lip, not including that of chin, six; the disc of the lower eyelid consists of two pellucid plates. Ear-opening ovate, with the *membrana tympani* visible close to its orifice. Scales of back and sides small, subquadrangular, and disposed in regular transverse rows, slightly bending at the centre of the back; scales of the under surface of the neck small, subovate, and imbricate; antepectoral fold slender, and with ten small quadrangular plates, the centre one much the largest, those at the extremities very small. Pectoral plates small, quadrangular, and arranged in broken rows, those of belly larger, quadrangular, and ten in the longest rows. Pre-anal plates about twelve in number, three large in the last row, and a very small one at each extremity; femoral pores fourteen. Scales of upper and lateral parts of tail slightly carinated, of under parts smooth. When the fore-leg is placed along the side of the neck, the longest toe reaches to the point of the nose, and when the hinder leg is stretched along the side, the longest toe reaches to the external ear.

Length from the tip of the nose to the anus $1\frac{3}{4}$ inch, of the tail $3\frac{1}{2}$ inches.

Inhabits the interior of Southern Africa towards the tropic of Capricorn. The only two species to which it bears, from certain details in its colouring, some faint resemblance, are certain varieties of *E. Knoxii* and *lineo-ocellata*. Its having a transparent disc to the lower eyelid, forms a character which at once bespeaks it as different from the first, and having flat instead of carinated scales, establishes it as different from the latter.

EREMIAS PULCHRA.—SMITH.

REPTILIA.—PLATE XLVII. FIG. 2.

E. superne flavo-grisea carneo-tincta, dorso lateribusque maculis parvis fasciisque brunneo-rufis variegatis; squamis dorsalibus parvis subovalibus in series transversis dispositis; scutis pre-analibus numerosis; scutis ventralibus in ordine singulo octo vel decim; poris femoralibus 11 or 12.

LONGITUDINE nasi apice ad anum 2 unc.; caudæ 4½.

COLOUR.—The upper parts of the head, the back, the sides superiorly, and the outer surface of the extremities, light broccoli-brown, brightened with flesh-red, and the back and sides variegated with small brownish red spots, and broken brownish red bands. The spots are arranged in two rows along the centre of the back and upper surface of the tail near to its base, many of them being partly brownish red, partly pure white. The bands are two, one on each side, commencing behind each ear-opening, and terminating at the base of the hinder leg, portions of these bands consist of freckles, other portions of somewhat circular rings, or quadrangular links, either separate or connected; the outer surface of the hinder extremities towards body with a few minute brownish red spots. The sides of the head and the under surface of the neck, body, and tail, dead-white.

FORM, &c.—Figure slender, tail much lengthened, and very delicate towards the point; head slender and lengthened, posteriorly of equal width, anterior to eyes tapered; the nose narrow and slightly rounded; the sides of head, anterior to eyes, vertical, posterior to eyes, slightly convex. Nasal plates separated by the intervention of a small quadrangular plate; naso-rostral rhomboidal, the anterior angle rather lengthened, and more acute than either of the other three; fronto-nasal contiguous; frontal moderately long, broadest before, and both its anterior and posterior edges semicircular; fronto-parietal plates contiguous; parietals subcircular; interparietal large, five-sided, the two anterior sides meeting anteriorly, and forming an acute angle; occipital plate small, and placed immediately behind the interparietal; palpebral plates, transversely, subovate, and anteriorly, posteriorly, and exte-

EREMIAS PULCHRA.

riorly, edged with minute granular scales ; freno-nasal plate small, quadrangular; freno-ocular quadrangular, much broader behind than before ; anteroocular plates small and compressed ; labial plates, anterior to large infraorbital plate, four, behind it three, horizontally compressed and projecting ; plates of lower jaw, exclusive of chin plate, five or six (Vide Plate XLVIII. figs. 13, 13 *a*, and 13 *b*). Ear-opening vertically subovate, and the *membrana tympani* visible, being immediately within the orifice. Scales of the back and sides small, ovate, disposed in more or less regular transverse rows, each row slightly removed from the other ; scales of the under surface of the neck, anteriorly, small and subquadrangular, posteriorly, rhomboidal and in both situations imbricate ; antepectoral fold very narrow, and formed of twelve small irregular plates ; pectoral and ventral plates quadrangular, and arranged in transverse rows, twelve in the most lengthened of the ventral rows ; pre-anal plates rather numerous in four transverse rows. Femoral pores eleven or twelve. Scales of the tail, superiorly, carinated, inferiorly, quadrangular and smooth. Forelegs, when directed forwards along the sides of the neck, have the longest toe of the foot extending slightly in advance of the eye ; hinder legs, when directed along the sides, have the longest toe reaching to the ear-opening.

Length from nose to anus 2 inches ; of tail $4\frac{1}{2}$ inches.

Found on dry flats in the interior of Southern Africa. In several respects this species resembles *Eremias pardalis*, but is at once to be distinguished from it by its having fourteen or more pre-anal plates, whilst *E. pardalis* has only three.

EREMIAS FORMOSA.—SMITH.

REPTILIA.—PLATE XLVII. FIG. 3.

E. superne flavo-brunnea fascis quatuor longitudinalibus variegatis, quarum duabus nigro-brunneis, duabus pallide flavis; corporis lateribus flavo-brunneis nigro-brunneo umbratis et annulis nigro-brunneis maculisque subflavis notatis; dorsi squamis parvis, subrhomboidalibus, imbricatis; palpebrâ inferiore pellucidâ; caudâ inferne versus apicem bicarinatâ.

LONGITUDINE nasi apice ad anum 1 unc. 9 lin.; caudæ 3 unc.

COLOUR.—The upper surface of the head and the middle of the back intermediate between yellowish brown and buff-orange, which colour is bounded on each side by two longitudinal bands extending between the hindhead and the base of the tail, the outer band narrow, of a light straw-yellow colour and in some specimens interrupted, the inner band considerably wider, continuous, and of a deep liver-brown hue. Sides of the body dull yellowish brown, freckled with liver-brown, and variegated with a few dark liver-brown rings surrounding light straw-yellow spots. Legs, anteriorly and superiorly, yellowish brown, tinged with purple, and variegated with a few small oblong straw-yellow and liver-brown spots. Tail, superiorly, the same colour as the legs, and variegated for some distance from its base, on each side, with a row of small, quadrangular, straw-yellow spots, all of which, but more especially those nearest to the back, margined more or less with liver-brown. The under parts of the head, body, tail, and extremities, dull bluish white.

FORM, &c.—Body rather robust; tail long and tapered to a fine point; head rather short, broad posteriorly, rather narrow and tapered anterior to the eyes; nose slightly rounded; sides of head before the eyes perpendicular, behind them rather convex. Nasal plates contiguous; naso-rostral plate large and subrhomboidal, anteriorly, nearly truncated; fronto-nasal plates contiguous, six-sided, the anterior and outer side very short; frontal plate lengthened, five-sided, widest anteriorly, and in front terminates in an obtuse angle; fronto-parietals contiguous; occipital four-sided, the posterior side more lengthened than the anterior and slightly arched; palpebral plates somewhat pyriform, and surrounded externally, anteriorly, and posteriorly,

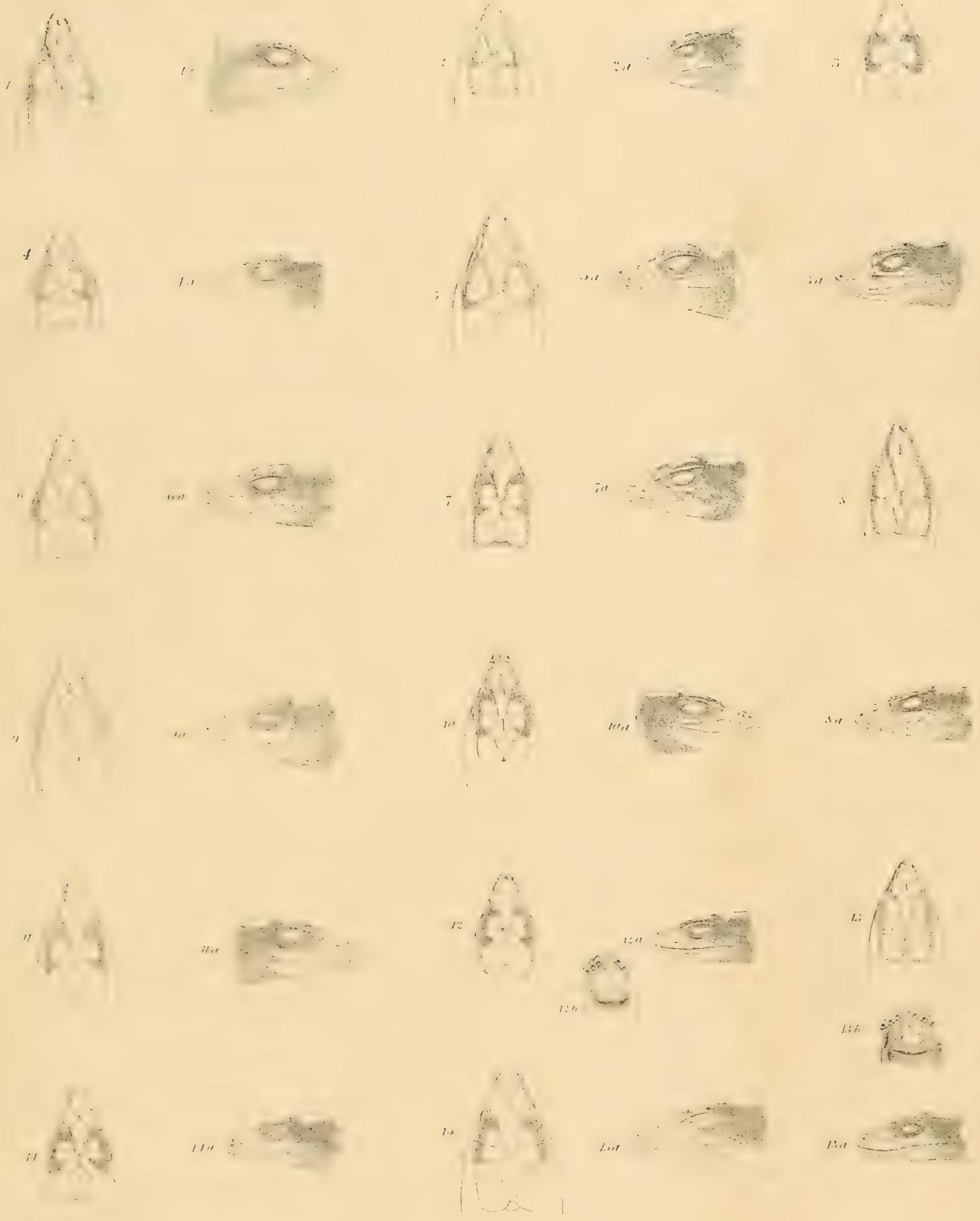
EREMIAS FORMOSA.

with minute granular scales ; the shape of the other plates uncertain, from the specimen having been injured by shot. *Vide* Plate XLVIII. Fig 15 and 15 a. Plates of upper lip, in front of large infra-orbital plate, five, behind it two, the hindermost much the smallest; plates of lower lip, not including that of chin, six; freno-nasal plate quadrangular, freno-ocular large, and considerably wider behind than before; disc of lower eyelid consists of two large pellucid plates. Scales of the back small, subrhomboidal, and arranged in regular transverse rows, each row forming an obtuse angle at the centre of the back, and each scale slightly overlapping the one immediately external to it, as well as the one directly behind it. Scales of the upper surface of the tail strongly carinated, of the under surface near to the vent, thin, quadrangular, and flat, towards the point laterally compressed, and forming two obtuse keels, between which is a deep longitudinal furrow. Scales of the under surface of the neck, towards the chin, small, oblong, and subovate, of the posterior part, towards the breast, larger, somewhat triangular, and imbricate; antepectoral fold distinct, and formed of twelve small, somewhat quadrangular plates, the middle ones the largest; plates of the breast quadrangular, and arranged in irregular waved transverse rows; plates of the belly in nearly straight transverse rows, ten in the longest, the middle plate smallest and triangular, the others quadrangular. Preanal plates about fourteen, four in the hindermost row; femoral pores eleven or twelve. On the fore leg being stretched along the side of the neck, the longest toe reaches a little beyond the point of the nose; and on the hinder one being extended along the side, the longest toe touches the angle of the mouth.

Length from the point of the nose to the vent, 1 inch 9 lines; length of the tail, 3 inches.

Inhabits the arid districts on the western coast of Southern Africa, more especially in the neighbourhood of the Orange River. It is extremely active and very shy, consequently specimens are procured with difficulty, and I only succeeded, even with the aid of a gun, in obtaining two, both of which were much injured by the shot.

So far as colours are concerned, this species bears considerable resemblance to *Eremias Knoxii* and *lineo-ocellata*, but the scales of its back being flat and without keels, and its tail below toward the point being bicarinate, furnish characters by which it is readily to be distinguished from both.



Reptilia - Plate 43.

Fig. 1 & 1a. *Eremias* *Knoxii*. — Fig. 2 & 2a. *Eremias* *variabilis*. — Fig. 3 & 3a. *Eremias* *laticeps*.
 Fig. 4 & 4a. *Eremias* *Burchelli*. — Fig. 5 & 5a. *Eremias* *lugubris*. — Fig. 6 & 6a. *Eremias* *Namaquensis*.

Fig. 7 & 7a. *Eremias* *Capensis*. — Fig. 8 & 8a. *Eremias* *cullulata*. — Fig. 9 & 9a. *Eremias* *rubro-punctata*.

Fig. 10 & 10a. *Eremias* *lineo-ocellata*. — Fig. 11 & 11a. *Eremias* *undata*. — Fig. 12 & 12a. *Eremias* *pulchra*. — Fig. 13 & 13a. *Eremias* *pardalis*.
 Fig. 14 & 14a. *Eremias* *Amphilophia*. — Fig. 15 & 15a. *Eremias* *formosa*.



PYXICEPHALUS ALISPERSUS
(*a*. Adult *b*. Young.)

Zoologia Plate 49.

PYXICEPHALUS ADSPERSUS.—DUM. ET BIB.

REPTILIA.—PLATE XLIX. (MALE AND YOUNG.)

P. superne, pallide brunneo-viridis rubro-brunneo-umbratus ; dorso lateribusque maculis et lineis, viride-flavis notatis ; subtus, sulphureus rubro-auranteo-tinctus. Capite, corpore superne, extremitatibusque externe o granulis et rugis longitudinalibus rugosis ; saccularum vocalium aperturis prope ad oris angulas ; lingua grande ovale postice fortiter emarginata ; extremitatibus fortibus et brevibus.

LONGITUDINE nasi apice ad anum 5 unc. 6 lin.

PYXICEPHALUS ADSPERSUS, *Tschud.* Class Batrach. Mem. Societ. Scienc. Nat. Neuch. tom. ii. page 84.

COLOUR.—The upper parts of the head, the back, and the upper parts of the sides rusty oil-green, shaded with reddish brown, and variegated with small spots and short longitudinal stripes of wine-yellow. Sides of head and outer and hinder surfaces of extremities light sap-green, the lower portion of the sides, the inner surface of the extremities, the toes, and all the under parts wine-yellow, shaded with brownish orange ; and the under surface of the head blotched with irregular spots and stripes of a clove-brown colour. Eyes deep chestnut-brown, highly variegated with yellowish white dots having a strong metallic lustre. In young specimens the variegations in respect of colour are more defined, and consist of vertical bars on the upper lip and lower parts of the sides, of longitudinal waved stripes on the back and upper parts of the sides, and of transverse bars on the outer surface of the extremities.

FORM, &c.—Figure robust. Head depressed, posteriorly very broad, anteriorly narrow and rounded ; its upper surface is rather concave, having a broad longitudinal depression extending from the hindhead nearly to the nose. The nostrils are situated at the upper and anterior part of the head, each about midway between the edge of the upper lip and the anterior canthus of the eye, are small, ovate, and with their opening directed outwards and backwards. Eyes moderately large, the upper eyelid broad and granular externally, except at its ciliary margin. Mouth large, and its angles about the same distance behind the eyes that the eyes are behind the nostrils.

PYXICEPHALUS ADSPERSUS.

Teeth rather strong, closely set, and slightly curved inwards; the lower jaw anteriorly has three prominent triangular processes, the intermediate one the shortest, and all three, when the jaws are closed, are received into depressions in the upper formed to admit them. Palatal teeth in two small clusters, one in front of the inner extremity of the internal opening of each nostril. The anterior extremities are short and nearly cylindrical, the toes four, strong, conical, and very short, the outermost the longest, and the innermost but one the shortest. The hinder extremities are powerful, but short when compared with the size of the frog; toes five, cylindrical and tapered to a point, the second, reckoning from the outside of the foot, very long, the first and third of equal length and much shorter, the other two very short; all connected at their base by a rudimentary web. Immediately posterior to the inner toe, particularly of the hinder feet, there is a large and hard compressed tubercle with the edge directed towards the middle of the foot rather sharp, somewhat keeled, and the under surface of each of the joints of the toes are cushioned with a pulpy granule or tubercle more or less developed. Tympanum nearly circular, about four lines in diameter, and situated directly over the angle of the mouth. The surface of the head, back, sides, and outer parts of the hinder extremities is rough and granular, and between the granulations of the hindhead, back, and sides, the skin is in various places puckered, so as to form prominent longitudinal rugæ, as represented in plate. The granulations on the hinder portion of the back and on the posterior extremities, especially towards the body, are larger and less numerous than on the other parts where they occur. The fore legs, the inner surface of the hinder legs, and the under parts of the head and body smooth. Tongue large, ovate, and deeply emarginate behind. Length of hinder legs 6, of fore legs 3 inches. Length of head and body $5\frac{1}{2}$ inches; width of head posteriorly 3, of body $4\frac{1}{2}$ inches

This frog is far from being generally diffused in South Africa, although it exists in localities very distant from each other. The only individuals I found within the colony were towards the eastern boundary, where it was familiarly spoken of by the inhabitants under the name of "Bull Frog," so called from the strength and hoarseness of the sounds it emits, particularly during the night. It lives generally in water, and is only seen in it, or at least in its immediate vicinity. The inhabitants report it to appear only during the rainy season, and at other times, from there being no water, in the localities where they observe it existing during the period mentioned, they are of opinion that it conceals itself in the mud which remains after the water disappears, and that it continues in it till called forth afresh by a renewed supply of water. No opportunity occurred to me of testing the accuracy of the conclusion, therefore I would only observe, I have seen probably fifty in a temporary pool of water, and at a great distance from any spot where water existed during the entire of the year.

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Edited and Superintended by RICHARD BRINSLEY HINDS, Esq., Surg., R.N., Attached to the Expedition.

Among the countries visited by the SULPHUR, and which in the present state of Science are invested with more particular interest, may be mentioned the Californias, Columbia River, the North-west coast of America, the Feejee Group (a portion of the Friendly Islands), New Hebrides, New Ireland, New Guinea, China, and Madagascar.

PLAN OF PUBLICATION.

I. The Work will be completed in Ten Parts, one of which appears regularly on the 1st of every Third Month.

II. The Parts are published at the uniform price of Ten Shillings, and it is intended that each department shall, as far as possible, be complete in itself.

PARTS 1 and 2, MAMMALIA, by J. E. GRAY, Esq., F.R.S., PARTS 3 and 4, BIRDS, by J. GOULD, Esq., F.R.S., PART 5, FISH, by J. RICHARDSON, M.D., F.R.S., and PARTS 6, 7 and 8, containing SHELLS, by R. B. HINDS, Esq., are now published; and PART 9, containing the Second Part of FISH, by DR. RICHARDSON, will be published on the 1st of April.

THE BOTANY OF THE VOYAGE OF H. M. S. SULPHUR.

By GEORGE BENTHAM, Esq., F.L.S., &c.

DURING the widely extended voyage of Her Majesty's Ship SULPHUR, the subject of Botany was pursued with much diligence, many hitherto unexplored localities were visited, and the collections brought home afford a number of plants of very considerable interest to science, and which are conveniently divided into the following geographical heads. These different departments are preceded by notices of the climate and seasons, and of the general features of the localities and vegetation, by Mr. Hinds; and the New Species are determined and described by Mr. Bentham.

I. NORTH-WEST AMERICA, embracing Kikhtak in Alashka, Port Etches in King William's Sound, Rose Island, Port Mulgrave, Sitka, Nootka Sound, and the Columbia River.

II. CALIFORNIA, embracing Bodega, San Francisco, and the Rio Sacramento in Upper California; and San Pedro, San Diego, San Quentin, San Bartolomé, Bay of Magdalena, and Cape San Lucas in Lower California.

III. WESTERN TROPICAL AMERICA, embracing the island of Puna in the Bay of Guayaquil, Salango, San Pedro in Columbia, Atacames, Tumaco, island of Gorgona, Panama and the adjacent island of Taboga, Bay of Honda, Realejo, Gulfs of Nicoya and Fonseca, Acapulco, Manzanilla, San Blas, and the country about Tepic.

IV. PACIFIC OCEAN, embracing the Sandwich Islands, Marquesas Islands, Bow Island in the Pomotou or low coral islands, and Society Islands.

V. NEW IRELAND AND NEW GUINEA, embracing also the Feejee Islands, and Tanna in the New Hebrides, presenting a transition vegetation of considerable interest, between the Asiatic and Pacific.

VI. CHINA, embracing Hong-Kong, and the neighbouring islands, with the banks of the Canton River, and such other situations as circumstances permitted the Naturalists to examine.

Parts 1 to 5, are now ready, and Part 6, will be published on the 1st of April.

PLAN OF PUBLICATION.

I.—It is calculated upon a careful estimate, that the whole will be comprised in SIX PARTS, each containing Three Sheets of Letter-press and Ten Plates.

II.—The Parts will appear Quarterly—Price 10s. each.

* * * In order to secure to Science the full advantage of these Discoveries, the Lords Commissioners of Her Majesty's Treasury have been pleased to sanction a liberal grant of money towards defraying part of the expenses of these publications. They have in consequence, been undertaken on a scale worthy of the high patronage they have received and are offered to the public at a much lower price than would otherwise have been possible.





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